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Preliminary Observations on Vitamin A Deficiency As Shown by Studies With the Visual Photometer

IRA O. PARK, M.D.

VETERANS' ADMINISTRATION FACILITY

MUSKOGEE, OKLAHOMA

The newspapers, radios, billboards, and even full-page displays in the medical journals advertise the virtues of vitamins until the average physician dismisses it all as a commercial scheme and thinks that there is not enough therapeutic merit in this much-discussed element of the diet to warrant his special consideration.

Numerous vitamins have been identified. They are so intimately related and so governed in their action by a number of factors prominent among which are the endocrine glands, that the combined efforts of research workers and general practitioners will be necessary to arrive at a complete knowledge of the role played by them in normal and pathologic states of human metabolism.

The major symptoms of marked vitamin deficiency are well known, but the possible effects of a slight or moderate degree of deficiency prolonged over a period of years is entirely unknown. It may be that permanent and irreparable damage to important organs may be produced by a prolonged or slight degree of deficiency in one or more of the important vitamins.

Theoretically a properly balanced diet should supply the necessary vitamins. However, in the present state of our knowledge it would be almost impossible to work out a generalized diet to cover the needs of all types of individuals and not leave a number deficient in some vital element. This thought suggests the importance of the addition to diet of vitamin concentrate to assure an ample supply.

It is the purpose of this paper first, to show briefly the therapeutic value of vitamin A, in a number of pathologic states, and in seemingly healthy individuals. Second, to call attention to the use of the photometer according to the technic of Jeans, as a simple method to be used by the general practitioner for the detection of vitamin A deficiency, and for measuring response to vitamin A therapy.

The vitamin A medication used in the treatment of the cases described in this paper was carotene in oil.[1] Carotene is the plant pigment which gives the yellow color and vitamin potency to carrots, butter, cream and certain fruits and vegetables. It has been conclusively demonstrated that carotene is non-toxic.

When carotene (pro-vitamin A) is ingested into the system it is converted into vitamin A apparently by the action of the liver. Carotene is found in the blood stream and recently it was derived chemically from the visual purple of the rabbit's eye. Vitamin A is apparently largely stored in the liver and in smaller quantities in kidneys and other organs.

Vitamin A deficiency has been recognized in the past only when it reached an advanced stage, producing malnutrition. The most familiar form of vitamin A de-

ficiency is xeropthalmia, rarely seen in America. Vitamin A deficiency may result from an inadequate intake of the vitamin in the food, from deficient absorption and storage of the vitamin as the result of intestinal or hepatic derangement, or from an increased metabolic consumption of the vitamin during periods of rapid growth or of disease. Especially during the course of severe infectious diseases, as for example, measles, mumps or pneumonia, the body either utilizes great quantities of this vitamin or the liver is prevented from manufacturing it.

Vitamin A deficiency apparently affects the epithelial tissues in a specific manner. Eustermann and Wilbur[2] note the following: "The pathological investigation of Wolbach and Howe, subsequently confirmed by various other investigators, shows that there is a substitution of stratified keratinizing epithelium for normal epithelium in various parts of the respiratory, alimentary and genito-urinary tracts, in the eyes and in the para-ocular glands; or, in brief, metaplasis of the greater part of the ectodermal leaf of the body. Such changes may be followed by infection in the various organs or tissues. Thus, the maintenance of intact, healthy epithelial membranes, which constitutes the first line of defense against bacterial invasion is a prophylactic function of this vitamin of the first importance."

In January, 1934, while seeking relief from repeated colds and sinus infection and also something that would build the resistance and stimulate the appetites of my two small daughters, I became interested in carotene as the source of a reliable and ample supply of vitamin A. For several months I studied the clinical results of the use of carotene in oil on the members of my family and on a large number of patients.

The appearance of an article by Jeans and Zentmire[3] directed my attention to the use of the visual photometer as a method for the determination of the amount of vitamin A in the human.

In August, 1934, following the technic of Jeans and Zentmire, I began to make tests for night blindness on individuals of various ages and with various disabilities. The majority of the tests reported by Jeans and Zentmire were made on children in whom the presence of disease had been ruled out. On the contrary, my series included individuals selected at random varying from six to seventy years of age. The majority, however, were patients at Hines' Hospital, Hines, Illinois, and were under treatment or observation for certain disabilities. A second group was tested in a school at Muskogee, Oklahoma.

Jeans has shown that the test for vitamin A deficiency employing the visual photometer, hinges around the measurement of the degree of night blindness.

In the retina are the small rods which are sensitive only to light and darkness. Around these rods is deposited the visual purple (rhodopsin), a substance which is very sensitive to light and disappears entirely when it is exposed to very bright lights for any great period of time. After sufficient time has elapsed this substance is rebuilt by metabolic processes provided that the proper elements are present. Recent experiments have shown that pure carotene or pro-vitamin A can be separated from the visual purple of the eye of the rabbit giving rather definite proof that there is a close relation between the vitamin A supply and the ability to rebuild the visual purple of the eye following exposure to bright lights.

For a detailed description of the technic of these studies the reader is referred to the original article by Jeans and Zentmire. Briefly the test may be described as follows: The electrically illuminated Birch-Hirschfeld photometer manufactured by Carl Zeiss, Inc., was employed. The instrument consists of a metal tube with a light bulb at one end, and an iris diaphragm, a five-light-point disc and a Goldberg wedge at the other. The iris diaphragm may be opened or closed by moving a lever along a scale marked with the diameter of the opening in millimeters. The five-light-point disc is made of blackened metal and has punched out of it quincunx of the throw dice. The Goldberg wedge is marked with a scale of opacities, the numbers of which increase from one to thirteen.

The subject, looking at the photometer, observes the light as regulated by the

wedge and the iris diaphragm and transmitted through the disc. Light sensitivity is measured by the number of observed light spots in the five-point-light disc in relation to the diaphragm opening and the wedge opacity.

During the test the subject was seated comfortably in a chair. For five minutes a moderate illumination of the room was maintained. This was then replaced by a brilliant light (150 watt lamp) for a period of five minutes at the end of which time the light was turned off, and the initial reading made. A second reading was made at the end of a period of ten minutes of darkness. The test was found to be extremely simple, and repeated examinations spoke well for its accuracy.

I realize that this is a pioneer field of research and my observations are submitted with the hope that they may serve to direct the attention of the profession to the importance of an adequate supply of vitamin A in the diet of apparently healthy as well as frankly ill individuals. The observing family physician will teach his patients the proper dietary principles including the important roles played by the vitamins. It has been the lack of instruction on the part of the physician which has caused the public to turn to such agencies as radios and commercial advertisements for their information.

It is furthermore the alert family physician who has the opportunity of detecting early stages of vitamin A deficiency.

As stated above, my observations are only preliminary in many instances. Over 275 individuals have been tested from one to five or more times. The following cases are grouped according to their types.

NORMAL CASES

In this group there are over one hundred cases. The subjects who were working or going about their daily routine without a known important disability were classed as normal. There were two groups, one largely adult, the other principally made up of children.

A large percentage of these cases were found to be below normal in vitamin A content. Those who tested high were from small towns and their diet was liberal and rich in vitamins or they had taken some vitamin A product for a long period of time. A few individuals full of vim and vigor and in apparently perfect health showed high tests.

From the results of these tests it would appear that a large percentage of men and women who work in institutions, offices and stores, especially in the larger cities, are deficient to a certain degree in vitaman A. This deficiency is caused by the fact that they eat irregularly, improperly and hastily; second, food in a city is often either over or under ripe, stale or overcooked, rendering the vitamin supply inadequate even if the proper type of food is eaten.

Women desiring to reduce leave out of their diet everything that is rich in vitamin A, and among this group are found certain of the most marked evidences of vitamin A deficiency.

From this study of normal individuals it would appear that every person who is not on a known light vitamin diet should take carotene or some similar vitamin concentrate. It would also appear that it would be economical for institutions, such as hospitals and schools to use vitamin concentrates to insure the vitamin potency of the food intake, thereby securing greater nutritional results. In a number of institutional cases tested, gain in weight was secured by the addition of carotene with no change in the diet. It has also been shown that many of the children under these tests improved in their school work and activity with the addition of known quantities of vitamin A to the diet.

The question arises concerning the minimal amount of vitamin A necessary to insure normal health, or what is the smallest amount that can exist in the human organism without resultant damage. It is reasonable to suppose that the growing child needs more vitamin A than the adult in proportion to weight, and it also appears that for maximal efficiency the adult requires a full supply.

The regular addition of vitamin A to the diet of every individual would be entirely harmless. In experiments using as high as seventy-five minims of carotene daily for a period of several months, no damaging effects were noted. In the majority of pa-

tients who were low in the photometer tests and who were given carotene for several weeks, showed an improvement of from one to three points as measured on the photometer.

GASTRO-INTESTINAL CONDITIONS

Nineteen known gastro-intestinal cases showed a marked deficiency in vitamin A. Some of these improved rapidly under carotene therapy while others showed no response. These results suggest that we have in the visual photometer, possibly another liver function test. Pro-vitamin A is converted by the liver into vitamin A and the liver stores a large part of the vitamin A in the human system. Anything that would interfere with liver function would stop the restoration or rebuilding of visual purple at a certain point. This was further proven by the fact that terminal cases of cirrhosis of the liver did not respond to large doses of carotene and would improve only to a certain point regardless of the amount of carotene taken. These patients, however, seemed to feel better while taking carotene and the appetite was increased. Any gastro-intestinal condition would be expected to hamper the efficiency of the liver and thereby retard the manufacture of vitamin A from the normal food intake or from large doses of carotene.

One interesting but as yet unexplained result of large doses of carotene was the change in the shape and consistency of the stool in a great many of the cases observed. Some patients who had spastic colitis found marked relief, others with diarrheas found that the stool changed to a normal one while taking carotene. Especially was this true in the diarrhea of diabetics. It is interesting to know that a number of these cases had previously taken other vitamin A products without any change, leading to the conclusion that pro-vitamin A has additional functions to that of vitamin A, either *per se* or through the synthesis necessary to change the carotene into vitamin A.

SINUS AND MISCELLANEOUS INFECTIONS

A large number of various types of infection were observed. All were uniformly low in vitamin A as demonstrated by the photometer tests. Some patients showed marked improvement under carotene therapy. One patient who was studied over a long period of time following pneumonia showed an increased appetite and gained thirty pounds in weight. Infections destroy in some way the vitamin A supply of the system. It is a mooted question as to the relation of vitamin A to infection but it would appear that it is one of the factors that have to do with making certain tissues more resistant to infection. Children who had had some form of infection tested much lower, but the addition of carotene to the diet rapidly rebuilt the vitamin A supply in the system. In a small series of patients tested following attacks of measles and mumps the improvement in the test on the visual photometer was more rapid in the children who were given carotene. Some of the lowest tests on the photometer were re-encountered with children who had had measles or mumps. It might be well to consider measles more important than we have heretofore. The fact that pneumonia or other infections are more serious following measles than under ordinary conditions may be due to the disturbance of the vitamin A storage or mechanism by the toxin of measles. In septic infection, Moore[4] reported that the vitamin A content of the liver was much lower than in other types of cases which came to autopsy. It would appear possible, therefore, that if an intravenous or subcutaneous solution of vitamin A could be provided for use in cases of septic infection, promising results would be obtained.

REPORT OF CASE

P. R. M., a girl aged seven years, entered school for the fall term, 1934, in a markedly under-nourished condition. Members of her family were known to have had tuberculosis. The child failed to gain on the general diet of the institution. Along with a group of under-nourished children she was put on a diet containing an abundance of milk, cocoa and butter. The other children gained weight, but the patient failed to do so. She had a "runny nose," and showed very little interest in her school work. In March, 1935, she was given ten drops of carotene in oil, t.i.d. After a few weeks of this therapy a progressive gain in weight was noted, together with less frequent cold, and an im-

provement in play activities and school work.

NERVOUS AND MENTAL CONDITIONS

Only two patients in this group were studied but this type of case furnished a great field for worthwhile investigation as undoubtedly marked vitamin A deficiency plays some part in degeneration and derangement of the nervous system. One interesting case diagnosed as alcoholic neuritis, at the first photometric examination, could only discern the lights after the wedge was completely removed. The patient was helpless and was brought to the office in a wheel chair. After three months of a large dosage of carotene the man's vision had improved to three points on the photometer and he walked one-half mile for his test.

It would be interesting if a number of similar cases could be tested. Nervous irritability and restlessness were in many cases markedly relieved by large doses of carotene. This was especially true in deficiencies of long standing and in cases of chronic alcoholism. I belive that alcohol has a tendency to destroy the vitamin A in the system or to prevent its manufacture and storage by the liver due to the congestion which it produces. This opinion is based on the fact that autopsies show low vitamin A content in the liver of alcoholics and a number of the patients found to be vitamin A deficient by the photometer test had been drinking heavily for several days or had been on recent parties.

Another interesting observation was that in cases of hyperthyroidism, the lights on the photometer appeared to the subject to be fading and disappearing. This was true also of a case diagnosed as neurocirculatory asthenia.

KIDNEY CONDITIONS

Unfortunately only a few cases of this type could be tested. Those who had not been on a high vitamin diet showed vitamin A deficiency and improved rapidly on large doses of carotene. There has been quite a bit of interest recently in the possible etiologic relation of vitamin A deficiency to the formation of urinary calculi. The recent work of Higgins[5] would indicate that vitamin A plays an important role in the protection of the epithelial tissue of the urinary tract. The cases described by Higgins improved on a high vitamin A diet. It has been suggested that high vitamin A diet be given to patients who have had kidney stones removed to prevent a recurrence. In some of the cases seen by the writer, who were not, however, tested with the photometer, there was a history of dryness of the hair and skin, night blindness and a diet low in vitamin A. Further studies in this interesting field must be made before it can be determined whether vitamin A deficiency plays the principle role in the formation of urinary calculi.

PERNICIOUS ANEMIA

Before the photometer was secured carotene was given to a large group of pernicious anemia cases, some showing symptoms of cord involvement. The entire group showed a marked improvement in appetite and where the dietitians formerly had to coax the patients to eat they had difficulty in supplying enough food while the men were taking carotene. Some of the cases with cord symptoms appeared to show a certain amount of improvement in the use of their limbs and made better attempts to walk. There apparently was no change in the blood picture from the use of vitamin A in the form of carotene. Rats made deficient in vitamin A by special diets in later stages show loss of use of the rear limbs, somewhat similar to that of cord changes in anaemic cases.

LEUKEMIA

Fifteen cases were examined in this group. All showed vitamin A deficiency with the exception of a few who had been taking carotene and a high vitamin diet prior to examination. Most of the cases tested improved with the use of carotene both symptomatically and as measured by the photometer. However, it was found that the number of white blood cells increased rapidly with large doses of carotene. It would, therefore, appear that vitamin A products should be given sparingly, if at all, to these types of cases.

DIABETES

Fourteen cases of diabetes were examined with the photometer. All were found to be relatively low in vitamin A. This group of patients showed a much higher percentage of gastro-intestinal disturbances than the average. In the reports of

Moore[4] the livers of diabetics examined showed high vitamin A content, indicating that diet is an important factor, especially a low carbohydrate diet. As mentioned above the diarrheas of the diabetics were controlled by large doses of carotene when all other forms of medication failed.

DISEASES OF THE CIRCULATORY SYSTEM

Eight cases of this classification were tested and all were found to be deficient in vitamin A. One young woman who had a diagnosis of coronary sclerosis, after large doses of carotene for a period of forty-one days felt much better and stronger. The night blindness of which she had complained was much improved and she was able to drive her car again without fear.

Other cases with marked cardiac damage improved symptomatically while taking carotene in large doses but of course such improvement was only temporary. Moore found in his examination of livers obtained at autopsies that those from cases of organic heart disease showed very low vitamin A content. It will require further study to determine whether or not this is due to the liver damage that follows or accompanies heart disease.

MISCELLANEOUS

Thirty-one subjects selected from the total series tested: This group of patients, in from six to forty-one days showed from one to three points improvement on the visual photometer after taking carotene in large doses. A large number approached normal in a comparatively short length of time after starting the carotene therapy. These results suggest that the vitamin A content of the system is increased rapidly by the use of provitamin A or carotene. Also it would show that the visual photometer is an accurate yardstick by which to measure the amount of vitamin A that is utilized from the food intake. Further study checking and rechecking of data from a large number of observers will be necessary before the maximal dose can be determined. However, by means of the visual photometer the clinician is able to determine whether the patient is deficient in vitamin A, and by the use of large doses of carotene he can also determine whether the patient is able to assimilate or convert the ingested food into necessary vitamin A content. Then by the addition of other vitamins and further tests the clinician can determine if there exists a deficiency in another one of the vitamins.

In certain cases tested who failed to respond to large doses of carotene, vitamin B, in the form of Brewer's yeast was added to the diet and a rapid response was obtained. One of these cases had known liver damage from an old amoebic dysentery.

These tests show that carotene has the advantage of not being toxic in large doses. A large number of cases were given as high as seventy-five minims of carotene or the equivalent of fifteen teaspoonfuls of cod liver oil in vitamin A content, over periods of three months with no signs of carotenemia or other symptoms of hyper-vitaminosis A.

The accompanying chart shows the re-

DIAGNOSIS: MISCELLANEOUS

Age—Years	Reading when Admitted				Interval—Days	Reading when Discharged			
	Initial Reading		10-Min. Reading			Initial Reading		10-Min. Reading	
	Wedge Setting	Diaphram Setting	Wedge Setting	Diaphram Setting		Wedge Setting	Diaphram Setting	Wedge Setting	Diaphram Setting
38	3	12	4	12	8	4	12	5	20
29	2	12	3	12	6	3	12	4	14
37	3	6	4	6	10	3	20	6	20
21	3	6	5	12	14	4	12	7	20
28	2	16	3	20	6	2	12	4	20
44	3	12	3	12	51	3	14	6	20
26	2	12	3	10	6	2	12	4	10
54	3	8	4	8	40	3	10	6	8
18	2	14	2	20	7	2	14	3	12
43	2	20	3	20	7	2	2	3	14
35	2	8	3	18	28	2	20	4	20
44	3	12	4	12	9	3	12	5	10
44	-1	20	-1	20	30	2	12	3	18
35	2	18	3	20	41	3	12	5	20
55	3	20	4	12	18	3	12	5	6
40	3	20	5	20	10	3	20	5	20
52	3	18	4	12	8	2	8	4	8
44	3	20	4	12	7	4	20	5	12
32	4	20	4	20	10	4	12	5	12
41	3	14	3	14	11	2	14	5	14
53	3	18	4	8	7	3	14	6	12
45	4	12	4	12	6	4	12	5	12
58	2	18	4	18	4	2	18	4	18
48	3	10	3	12	30	2	12	4	8
42	4	20	5	12	7	4	20	7	12
40	3	12	5	14	28	6	12	7	12
42	3	12	4	12	15	4	12	6	12
40	3	12	4	10	8	3	20	6	6
35	1	20	3	10	26	3	12	4	20
46	2	10	4	14	20	3	12	5	20
42	3	12	4	12	15	4	12	6	12

sults of photometric examinations in thirty-one cases selected from the total number studied. They were given carotene in oil. The resulting improvement in the majority demonstrated that the regeneration of visual purple is increased by the addition of carotene to the diet.

MARKED NIGHT BLINDNESS

Twelve patients with a severe degree of night blindness have been studied. Two of these have been observed over a period of six months. With large doses of carotene the visual purple of the eye has increased as shown by the photometric examinations. All of the patients with one exception have shown some improvement. For the most part the improvement has been gradual the improvement being about one point on the photometer each month. Two of the patients can again drive their cars at night with less fear.

As a result of questioning the subjects who have been examined it appears that there are individuals of all ages and circumstances who are unconsciously victims of night blindness. They take it as a matter of course.

The patients who complained of night blindness uniformly tested low on the photometer. No doubt a certain proportion of automobile accidents are caused by this condition coupled with visual defects.

REPORT OF CASES

Case 1: M. S., white, a male musician, aged forty-two, complained that he could not drive his car at night due to the irritation that the lights produced in his eyes. Since childhood he had studied music and from the history it was assumed that he had never eaten properly. At the age of fifteen he taught music as well as played, taking very little time for his meals. He ate sparingly, and particularly avoided vegetables.

The physical examination showed a fairly well-nourished, highly nervous man. The hair and skin were dry, and the eyes were markedly irritated. The heart, lungs, and kidneys, and the blood count were apparently normal.

The patient was very nervous and irritable; he paced the floor at night. He was placed on a diet rich in mineral salts and large doses of carotene in oil (twenty-five minims t.i.d.) were added. An improvement of three points on the photometer resulted; the appetite increased and he slept better than he had in years. The deficiency state in this case was marked and had evidently existed over so long a period that recovery was slow, but at the end of six months the results were extremely gratifying.

Case 2: A woman, white, aged thirty-five, stenographer, had a condition which had been diagnosed as coronary sclerosis several years previously. Since that time she had been careful to avoid over-exertion. About six months prior to my examination she developed difficulty in driving her car at night. She was in constant fear of a collision, and finally gave up driving altogether.

Examination revealed no visual defects. The initial photometric test measured only three points. She was given large doses of carotene in oil for three months, at the end of which time her test showed six points on the wedge, and she was able to resume driving without fear. A small dosage of carotene has been continued, and no further difficulty in driving has been experienced.

CONCLUSIONS

Following the technic of Jeans and Zentmire, the visual photometer has been used in testing individuals of all ages and subjects of numbers of various diseases. There appears to be no doubt as to the accuracy of this test for the vitamin A content of the human mechanism. It has been definitely proven that carotene or provitamin A rapidly restores the vitamin A content in cases in which its activity is not hindered by disease or complications which serve to prevent its absorption and conversion. No bad effects have been noted from the use of carotene in oil in large doses. From the tests made covering people in every walk of life, it appears that a large percent of our population are low in vitamin A. There is no definite proof that vitamin A is anti-infectious but all results point to its action as a barrier against infection by stimulating healthy epithelial tissue.

Examinations of specimens of liver from three hundred autopsies[4] for vitamin A showed about the same results as found by the photometer in my series, the different pathologic states showing

the same proportionate deficiency as found by the photometer.

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Cancer of the Skin

RICHARD L. SUTTON, JR., M.D.
KANSAS CITY, MISSOURI

The skin as an organ is considerably the largest of the body, constituting approximately ten per cent of the body weight, while the liver, the largest gland, is normally about three per cent. Covered, as the skin is, with epithelium, and supporting huge numbers of complex accessory structures, it is scarcely surprising that epithelial abnormalities are far from rare. In bearing the brunt of physical contact with environment, the skin is subject to insult and trauma of a multiplicity of kinds—chemical, actinic, bacterial, mechanical—that is impressive in variety, and continues from birth to death. One may remark also the active reproductive processes, evidences of endless cell divisions, in the growth of hair and nails, the secretion of fat, in which sebaceous cell bodies are disintegrated and reproduced, and the perpetual gradual exfoliation of horny substance from the entire surface.

1. Photomicrograph (x25) of small "wart-like" lesion from dorsum of hand. The abnormal epithelium is obviously invasive; individual cells are at this magnification seen to be larger and paler staining than normal, and manifest a marked tendency to group themselves in cornifying whorls. This structure in the gross is a bare fifth of an inch in diameter. Its improper diagnosis and inadequate treatment would mean death for the patient.

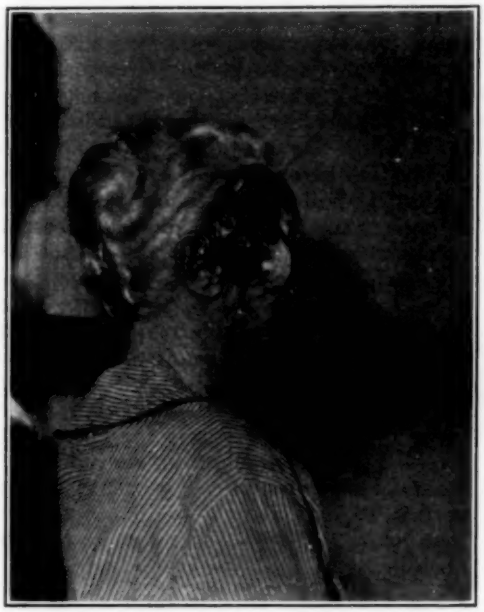
This unceasing activity, wherein new cells are produced in remarkable quantities, throughout the entire span of life, and in an orderly manner, fills one with wonder and astonishment.

In the course of these mitotic cellular activities, subjected as the skin is to such an assortment of extrinsic influences, there occasionally occur, according to my interpretation, disturbances of reproduction that result in the occurrence of cells that are not normal. I believe that, for example, actinic irritation, which is notoriously a factor in the causation of skin cancer, does so by altering the process of cell division, so that true mutants arise, mutants which continue to reproduce, but are not responsive to whatever it is that keeps normal growth within normal bounds. If, in the course of myriads of epidermal mitoses, characteristics be so altered in only one instance as to produce a viable mutant cell unresponsive to normal restraints and capable of growing where normal cells do not grow, then a carcinoma might be started. The progeny of the one cancerous cell would constitute a colony growing parasitically, and with potentiality of ultimately resulting in death of the host.

The concept of mutation of somatic cells in the explanation of origin of carcinoma is that of R. C. Whitman[1].

In presenting interpretation before observation, I am, scientifically speaking, putting the cart before the horse; but I wish at this time to start with the concept, then marshal the supportive evidence, and point out the correlation of theory with fact.

Since the researches of Thiersch[2] published in 1865, the continuity of cancerous



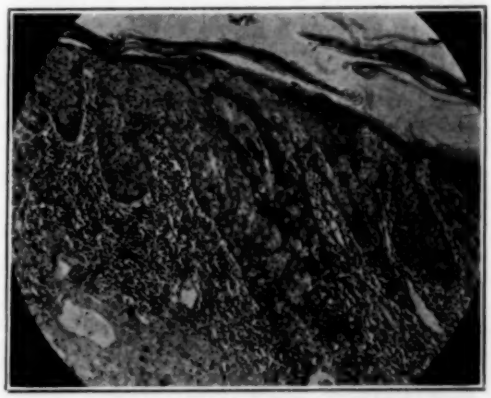
2. This huge vegetating, ulcerated, stinking tumor, soon to prove fatal, began as a tiny "warty" growth five years previously. It was treated by chemicals, later by excision, then by irradiation. Still later, after invasion of periosteum, cautery dissection proven inadequate. The old lady need not have died this way.

growths with the epidermis has been known, though the cell structure was interpreted as cylindromatous by Billroth[3] in 1866 and endotheliomatous by Koester[4] in 1867. Krompecher[5] in 1900 established the epidermal origin of rodent ulcer. Hansemann[6] had presented a theory of "anaplasia" as the cause, which Whitman[1], with whom I agree, considers too vague a term. In view of the atypical mitoses, multipolar divisions, hyperchromatic and hypochromatic nuclei, asymmetric mitoses and changes in number of chromosomes, he avers that the cancer cell is "a new kind of cell, strictly and literally a mutated cell."

Broders[7] states that "carcinoma, regardless of etiology, is a primary disease of the epithelial cells, and all other phases and sequelae, though of great importance, are in reality of secondary nature." In his careful study of small epidermal anomalies, he shows convincingly that cancer may be diagnosed while still of a thickness only little greater than that of normal epidermis. In recent papers I[8] observed that small cancerous lesions may begin *de novo*, on previously unaltered skin, and that the earliest visible manifestations are circumscribed dyskeratotic lesions which progress by continuous evolution into large and destructive tumors.

Molesworth[9], of Australia, has frequently pointed to the effect of sunlight upon the skin in the production of carcinoma. The lower lip is involved far more commonly than the upper because of its direction toward the sky. The dyskeratoses which become malignant occur on the exposed surfaces of sun-sensitive individuals; in my experience the vast majority of such patients possess florid complexions, bluish eyes, and generally light hair. Such so called "sailor skins" have been recognized for decades.

The condition is by no means limited to the aged, though the average age is high. Persons in their forties are not rarely sufferers, and I believe cases of xeroderma pigmentosum represent in reality the same thing. The preponderance of skin cancer in poorly pigmented individuals is true of other animals than the human.



3. Intra-epithelial carcinoma of Paget's type, from skin surface of lower lip. There are two kinds of epithelial cells present. One sees plainly the invasion and replacement of normal epithelium by abnormal. (x100.)

Findlay[10] observed 190 cases in about one million cattle slaughtered in four years in New South Wales. All but three of these were on partly or wholly white areas, and these three arose on the scars of brands. Roffo[11] successfully produced carcinomas in mice with ultra violet irradiation.

4. Bowen's disease. The individual centers of proliferation are unusually numerous. The centrifugal spread is apparent in the large circular patch. Ulceration and invasion have occurred in the large lesion between the scapulae.

Francis Carter Wood[12] points out that cancer grows best in healthiest tissue. This is what one would expect of tissue cells growing parasitically. He quoted M. B. Schmidt's experimental intravenous injection of cancer emulsions, which showed that only a small proportion of cancer cell emboli develop into metastases. But the fact that some do suffices to prove that one cell may constitute a cancer, for the isolated spherical culture of melanoma cells within a liver is as much a blastoma as the primary from which came the progenitor of the metastasis.

It is well known that many skin cancers develop from scaly spots. These lesions, of which Bowen's disease[13] is an example, are typically circular or oval, beginning small and spreading centrifugally, then eventually crusting, burrowing, invading and becoming self-evidently malignant. Ketron[14] described several curious examples of epithelioma forming annular lesions which had also begun in a small area, spread, then developed incrustations. Intraepithelial carcinoma, now a well recognized entity, possesses this same habit; cases have been described and discussed by J. R. Fraser,[15] W. Freudenthal,[16] J. Jadassohn,[17] Borst,[18] and Hamilton Montgomery[19] among others. Many senile keratoses have the structure of Bowen's disease, as Montgomery[19] states, a fact which my observations fully corroborate. Fraser[15] aptly remarks, "the cells in the Bowen lesion have already undergone the changes of malignant neoplasia." I shall present photomicrographs demonstrating the histologic evidences of intraepidermal neoplasia; it will not be necessary to invoke hearsay evidence of these facts. What is desirable, is to note that this early intradermal centrifugal spread of carcinoma is consistent with the hypothesis of a one cell origin, the progeny of the one cell growing where they can grow, spreading within the epidermis, following the epithelium of the hair follicle, evoking a round-cell response in the dermis, then growing into this looser inflammatory tissue as into a culture medium.

Malignancy in the cellular sense depends upon rate of growth, as I have written elsewhere,[8] and as J. C. Mottram[20] shows in his study of tar cancer. It is incorrect to allege that a lesion is simply benign or malignant in the strictest sense; it is either not neoplastic at all, or it is little, somewhat, quite, or very malignant, in accordance with its time rate of capacity for doing harm.

All arsenical keratoses, by some called precanceroses, along with a host of other histologically independent lesions, possess a degree of malignancy in this rather mathematical sense. As Franseen and Taylor[21] show, about one-third of arsenical cancers are basal-celled, not being all squamous in character; but they all start as keratoses, though not all the keratoses possess enough *vis a tergo* to proliferate into ulcerative tumors. X-ray produces fairly comparable lesions. The scaly pigmented spots upon an irradiation atrophy are indistinguishable from senile

keratoses. One notes, as Whitman remarked, that all agents predisposing to cancer are those that are known to affect cells through their reproductive mechanism. I believe each keratosis represents a colony of progeny of an altered cell, a somatic mutant. The colony may be vigorous or weakly, malignant or abortive, hearty or sickly, and so productive of tumors or asymptomatic. Perhaps a large proportion of mutated cells are nonviable and never give rise to naked eye lesions at all. Nevertheless, this theory is consonant with the facts, whatever belief it may be your pleasure to hold.

The blastomatoid changes that I stress as features of an early skin cancer have been observed and recorded in the epithelium of the uterine cervix, also squamous, by Schmitz and Benjamin,[22] and by Schmitz, McJunkin and Macaluso.[23]

The gross manifestations of cancer of the skin are too familiar to dermatologists to require more than passing mention. I would point out that a split pea-sized, waxy discoid lesion, not yet ulcerated but enlarging, is as truly a basal-celled epithelioma as one which has evolved into a cell colony of such size that its central portions receive inadequate nutrient, necrose, slough, and produce the central crust which is so characteristic of the rodent ulcer.

I will discuss treatment only to the extent of describing our practice. We have used radium many years and know its properties, potentialities, and what one may expect as well as one may know the automobile he handles daily; and we have discarded it as a curative agent in favor of the actual cautery. We routinely dissect out the lesions with the hot iron, going around the periphery through normal tissue, and beneath. The extent is determined as much by palpation as by sight, though stretching the skin and viewing the lesion with light suitably reflected from it, is very satisfactory. The excised tissue is examined microscopically. Sectioned through the middle, it is at once apparent, using low magnification, whether the margins are safe on both sides and beneath. It has been our experience that, when the microscopic evidence is clear with respect to total removal of tumor cell colony, recurrence has never occurred. The wound of such a burn sloughs, granulates, and heals in twenty-four to thirty days, and small doses of radium soften the cicatricial tissue so that the cosmetic end result is entirely satisfactory. The great satisfaction in this method of procedure is that one does not guess, or worry about the effect of differential necrotizing doses of irradiation upon normal and abnormal tissues; when the operation is done, the tumor is in the bottle, and the patient gets well and stays well. I speak, of course, of tumors which have not as yet metastasized. As Everett Lain[24] pointed out in 1920 in a report of 122 cases involving the lip, treatment must be individualized, and not routine, and a lesion distorted by poor treatment, or a recurrent one, offers at best doubtful or bad prognosis.

5. A minute nodule from the cheek, showing intra-epithelial growth of a colony of cancerous cells. The hyper-chromatism and variation in cell size and arrangement are seen even at low magnification (x40).

Intraepithelial lesions may be satisfactorily blistered off without damaging the derma, and so heal in ten days with no scar at all. Those experienced in the effect of radiation on intraepithelial lesions, know that resultant atrophy is usually apparent, and pigmentation and scaliness regularly recur within ten years, not invasive perhaps into the homagenized connective tissue of the altered atrophic corium beneath, but present nevertheless as an unhappy reminder that perfection has hardly been achieved.

1308 Bryant Building.

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Some of the Causes Why Infants Are Removed From the Breast With the Idea That Mothers' Milk Is the Offender*

C. V. Rice, M.D.
MUSKOGEE, OKLAHOMA

All animals, with the exception of the calf and the human infant, remain on the breast until they are old enough to be weaned. The calf has the advantage of the infant, however, for after it is weaned and taught to drink from a pail it will get its natural milk. The fat may be removed but as the calf learns to eat much earlier than the infant that is not so important. If the infant was only removed from the breast due to organic conditions of the mother, such as tuberculosis, cardio-renal, epilepsy, insanity, cancer, and some of the acute infectious diseases, there would not be so many factories specializing in the making of the various types of food for infant feeding. In going through my files I find that babies are removed from the breast for other causes than these maternal conditions mentioned. The condition, as a rule, was within the child itself, and if the mother would have had patience he would have done as well and better on the breast milk than he did on the bottle, in the majority of cases. What is the indication that the baby is not thriving on breast milk? The infant is not gaining its six or eight ounces per week. A baby should not be removed from the breast if he is not gaining more than four ounces per week. That is, if he is doing well in every other respect. I took one baby from the breast because he never gained more than four ounces a week, and on highly concentrated food this baby never did gain more than this amount, but was perfectly happy and healthy. So with that one experience I insist that the baby should remain on the breast unless there is a definite reason for removing same. As a rule the mothers think the breast milk is not agreeing with the infants, causing the babies to cry incessantly, when the following are the exciting causes: First, the nervous, irritable baby. This may be sub-divided into Innate Traits, Birth-Shock, Calcium Deficiency, the Allergic infant, Pyloric-spasm, Hyperacidity, and the Colicky baby. Then we have Otitis Media, Syphilis, and Tuberculosis.

NERVOUS IRRITABLE INFANT

Under the first type the nervous irritable infant as a whole has a nervous background. The infant received one-sixteenth of its traits from its grandparents, making one-fourth; one fourth from each parent which makes one-half; and one-fourth from remote ancestry combined, forming the entire plasma cell from which the infant develops. The infant at birth has three predominating traits, love, an-

*President's Address, Oklahoma Pediatric Society, Oklahoma City, May 13, 1935.

ger, and fear, which are innate, but I feel in many cases unstable nervous systems can also be combined with the innate trait of fear. The mother is sure her milk is not agreeing with her child because it cries eighteen hours out of twenty-four. In this instance the breast milk would be ideal. There is no artificial formula alone that is going to be suitable for this nervous, irritable infant. We see so many of this type that we think it might be a condition heard of a few years ago—Calcium Deficiency. But after doing several bloods for the determination of Calcium and Phosphorus and finding them normal or above normal, and then making inquiries at several children's hospitals and learning that their findings correspond with mine, in other words, normal, I wonder how much truth there is in some of the literature that we read and particularly that which is put out by the pharmaceutical houses.

ALLERGY TO MOTHERS' MILK

After you have satisfied yourself that this irritability is not due to Calcium Deficiency we then think of the Allergy to mothers' milk. This again has not been as satisfactory with me as some of the literature claims. No doubt it may play a part with some infants but with many it has been as unsatisfactory as the Calcium and Phosphorus Deficiency. I have only had one infant that I felt was truly an Allergic type. He was taken from the breast and tried on many artificial milk formulas with no success. The infant continued to cry regardless. I then happened to think of a food which most of us condemn and when made into the formula contains a very small amount of cow's milk. Then in its preparation—evaporation—the proteins are supposed to be changed, making a less sensitive milk for these allergic types. This is Eagle Brand Milk. As soon as this particular infant was placed on Eagle Brand Milk he was an entirely different child. Instead of crying eighteen or twenty hours a day, he slept twenty-two.

BIRTH SHOCK

There is another condition that is more probably the cause of this nervous irritability than Calcium Deficiency or Allergy, and that is birth-shock. These infants as a rule start to cry shortly after birth and continue to cry night and day until they are several months old. They have no signs or symptoms of birth injury other than their irritability with their continuous crying. They continue to gain on mothers' milk, but a baby that cries incessantly can not be expected to remain on the breast more than a few weeks. And when they are removed from the breast they continue to cry regardless of the type of the artificial food. This is one of the most aggravating conditions to all concerned. The household gets no rest or peace and are kept under a nervous tension, and the doctor builds no reputation if the infant continues to cry regardless of the change. There is one thing to remember if he is compelled to remove this infant from the breast—the artificial food should not be reduced in quality or quantity and should always have sufficient calories to maintain proper growth and development.

HYPERACIDITY

Another condition under which the baby is removed from the breast is hyperacidity. This infant resembles the nervous, irritable child in many ways, and is just as nervous, cries just as much, and it also has a frequent, curdy, acid stool. He has more hydrochloric acid than combines with the mother's milk, leaving a free acid which passes out of the stomach causing a rapid peristolsis of the intestines resulting in frequent, muceous, curdy, acid stools which burn and extoriate the buttocks. This type, while nursing, will let loose the nipple and cry out in pain. He should remain on the breast with the addition of an ounce or two of protein milk given before each breast feeding, which combines with the free acid overcoming the rapid peristolsis and the result is fewer B.M.'s which are thicker in character.

COLICKY BABY

The true colicky baby must not be confused with the Nervous Irritable, the Hyperacidity, or the Hungry Baby. It is a native urge for a baby to cry when he is hungry. If the mother is not giving a sufficent amount of milk to satisfy this urge, all that is necessary is to give him a supplementary feeding and if the baby goes to sleep we may be quite sure the crying was due to hunger. But if you have an

infant that starts to cry at a certain time of day or night and continues for a few hours and is gaining and sleeps all the time except at this crying period, you can be sure that this is a true colic type and will be demonstrated on the breast or any artificial food. However, many infants are removed for this cause only, for the mother to find out that there is no improvement when placed on the artificial food.

PYLORIC SPASM

With pyloric spasm the infant is often removed from the breast and given artificial food with no better results than before mentioned. The character of the vomiting is the same as that of Pyloric Stynosis, but in the Pyloric Spasm there is not such a rapid loss of weight as in Stynosis. As these Pyloric Spasm cases have a nervous background they are quite cross. These cases will do better on mother's milk with the proper medical treatment than they will do on artificial food.

OTITIS MEDIA

With Otitis Media the infant may be very cross with vomiting as of the Pyloric Spasm type with a normal temperature. Unless one is very cautious and makes a routine examination of all infants' ear drums this condition may be mistaken for Pyloric Spasm which I have done in one or two cases.

CONGENITAL SYPHILIS

Infants with congenital syphilis may be restless and fail to gain in weight. The baby is removed from the breast on this account. Syphilis should always be considered with this type of infant.

TUBERCULOSIS

An early symptom of tuberculosis in infants is irritability, and this is particularly true of the meningeal type. With the bronchial or pulmonary types the symptoms may be slight fever and no gain in weight. With infants it is generally not hard to locate the contact and then the P.P.D. Interdermal test generally cinches the diagnosis. Many babies are removed from the breast for convenience sake, and more probably for this reason than where it is necessary from some cause or condition of the mother. I try to impress upon these mothers the importance of breast milk, telling them how important it is considered in infant hospitals where it is kept and given only to the sickest infants. Without this mother's milk in the infants' hospitals many more of the children would die. And then, too, mother's milk is worth twenty-five cents an ounce to outside infants, where the total day's feeding costs from five to ten dollars. Why is it not just as important to their own babies? The value of the human milk presented in this manner quite often influences the mother to retain the baby on the breast. May the time come before a baby can be removed from the breast that it will be necessary to call in two other disinterested physicians as consultants. By so doing there will not be so many babies put on artificial food and it will also reduce the infant mortality during the first year of life.

Action of Mercurochrome and Other Drugs on Normal Human Skin and in Infected Wounds

Justina H. Hill, Baltimore, (Journal A. M. A., July 13, 1935), confines her paper to the presentation of additional material in regard to the bactericidal and bacteriostatic action of mercurochrome and other drugs on skin and in wounds. This involves certain carefully limited comparisons and the use of new methods. The subject matter is limited to new material for which she is personally responsible. She finds that there is urgent need for standard methods of studying the in vivo action of antiseptics for special uses. Methods are suggested which, on further refinement, might serve as bases for such standards. In regard to the action of antiseptics applied to the skin, it is shown that: 1. Under conditions of practical use no antiseptic studied can invariably sterilize heavily infected skin. 2. Aqueous solutions of antiseptics are not as a rule suitable for preoperative skin sterilization. 3. Both the two per cent tincture and two per cent aqueous mercurochrome solutions are bactericidal and bacteriostatic on human skin. The two per cent tincture of mercurochrome is superior to the aqueous solution on the skin. Only the tincture has been advocated for preoperative skin sterilization. If comparisons are to be made between the bacteriostatic actions of preparations of iodine and mercurochrome on the skin, the order of efficacy, according to the results of the experiments, is as follows: the two per cent tincture of mercurochrome; the seven per cent tincture of iodine, not removed with alcohol; the two per cent aqueous solution of mercurochrome, and then the seven per cent tincture of iodine, removed with alcohol. It is shown that it is improbable that a single application of any known antiseptic will sterilize a heavily infected wound. There is evidence that while both the tincture and aqueous solutions of mercurochrome are bacteriostatic in heavily infected wounds, the aqueous solution, under the conditions of the tests, is superior to the tincture of mercurochrome and to the other antiseptics tested, in that it keeps the bacterial count lower and does not interfere with phagocytosis.

Personal Experiences With Prostatic Resection*

HENRY S. BROWNE, M.D.
TULSA, OKLAHOMA

It is with some diffidence that I discuss a subject which has been written about by many men with much more experience than I have had. The early literature gave the impression that prostatic resection, while somewhat technical, was practically devoid of discomfort or danger to the patient. The potential dangers, and they are ever present, were barely mentioned, if at all.

In my first thirty cases, five resulted in temporary, and one in permanent incontinence—in a case of malignancy who has since died. This, I finally realized, was due to the fact that while the cut was being made, the sheath would creep outward unless it was firmly held, and I have had no such cases since. I have later cystoscoped four of these men and in each instance the verumontanum had been shaved off. High post-operative temperature was the rule, though typically the pulse rate remained below ninety and the patient's general condition was good. The sixth patient died in three weeks from a septic condition, caused, I believe, by resecting too deeply and getting through the bladder wall. One developed a high temperature as soon as the retention catheter was removed, which lasted a week. Cystoscopy has since shown that the entire trigone nearly through the bladder wall had been resected. The prompt reinsertion of the catheter without a doubt saved his life.

I, therefore, developed an early and lasting respect for this procedure, and realized that the more equipment one had the better off one was. This includes various examining telescopes and duplicate operating parts with the new telescopes which give far better vision than the original operating telescopes. I had done thirty cases before I felt reasonably sure of where I was working at all times. In spite of the mishaps above described in my early cases the results were good enough and the post-operative course so superior to that of prostatectomy, that I was encouraged to continue and my results are getting better and complications less all the time as I become more and more familiar with the procedure. I have done ninety resections and in the same period two prostatectomies, because I could not introduce the instrument into the bladder. I am, therefore, one of those who believe that resection is applicable in practically every case of prostatic enlargement.

The same preliminary care must be taken in building up the patient as for prostatectomy. I have been able to drain all of my patients with a retention catheter that did not already have a suprapubic tube. There is so little post-operative disturbance that I take chances on operating on patients who are grave risks. I however, draw the line on recently decompensated heart cases, as two of my deaths were due to cardiac failure. Low spinal anesthesia has been used in practically every case. The retrograde telescope has shown that in almost every case both median and lateral lobes have been enlarged intra-vesically with one or the other predominating. The operation consists of coring out the posterior urethra by removing all of the prostatic tissue which projects into the bladder and urethra, care being taken to keep the verumontanum inviolate, as by so doing the external sphincter is not endangered. Pieces of tissue which fall back into the bladder must be removed or they may interfere with urination when the retention catheter is removed. Bleeders are sparked as they appear. The retrograde telescope is invaluable in showing up any projecting pieces that may remain, when you think you have finished.

The post-operative care consists mainly of forcing fluids and keeping the catheter open. There is usually a slight rise in temperature for two or three days, and there

*Read before the Oklahoma State Medical Association Annual Meeting, Oklahoma City, May, 1935.

is practically no pain or discomfort. The catheter is removed in seventy-two hours, or twenty-four hours after the temperature returns to normal. The patient is allowed up on the same day and voids freely and easily. There is usually some burning, and frequency for a week or longer, but as healing takes place this disappears. The average stay in the hospital has been eight days. I have long ago quit trying to get them out in a hurry. Out of town patients are kept in town for another week, because one death was from hemorrhage on the ninth day after the patient had returned to his home, and another patient died one month later with a septic temperature. I believe I could have saved him in the hospital with proper care and a retention catheter, but he refused to return. There was one case of hemorrhage four hours after operation which was controlled without much trouble. Except for these two, bleeding has not caused any difficulty.

I had three cases of epididymitis in the first thirty cases, a very troublesome complication. Since then I have done a routine vasectomy at the time of resection in all but the younger and more vigorous. There has been no case of epididymitis from a retention catheter. A periurethral abscess occurred once following the forcible dilatation of a large calibre stricture in introducing the instrument. I have since obtained a smaller sheath and loops to fit, if another such case arises. Four patients had prolonged septic temperature lasting up to four weeks. General measures plus a constant indwelling catheter aided their recovery. There have been six deaths in ninety resections, five of which have been recounted above. The sixth was a grave risk with advanced cirrhosis of the liver and nephritis. Anuria developed and he died three days after operation. The youngest man was thirty-one and the oldest ninety-three. One was ninety and six in the eighties. There were no deaths in these cases. The great majority were, of course, between fifty-five and seventy-five. One was unsuccessful due, no doubt, to insufficient removal of tissue, and was not re-operated. Eight have had a second resection, six months to two years later; six of these were in my first twenty cases an ddue to the fact that not enough tissue was removed the first time. I console myself with the thought that that was far better than to have removed too much. I have been able to keep track of the majority of these men, and the results show the urinary stream to be consistently good, no residual urine in most of them, two ounces being the greatest amount. They get up not at all or only once at night, three having to get up three times.

I am thoroughly convinced that prostatic resection is the answer to an old man's prayer. The easy convalesence and almost complete lack of post-operative discomfort still amaze me. It will accomplish all that prostatectomy ever did and leave a man with his prostate. When done correctly the results are uniformly excellent and one such operation will convert the most confirmed prostatectomist into an ardent resectionist. The poor results and enormous mortality of some men have given the procedure an undeserved bad name in certain quarters. It is one of the most delicate, difficult and technical operations in surgery and when done properly it is followed by brilliant results, but when done improperly is fraught with the gravest dangers to the patient. The resectoscope is a marvelous instrument, but it can become a deadly weapon. Any man who has done prostatic resection and condemns it, thereby convicts himself of being unable to do it properly.

* * *

DISCUSSION

Dr. R. H. Akin: This is a mutual problem, and I shall not touch more on the details, but it is a mutual problem that lies between the attending physician and the urologist. There are several reasons for a paper in connection with this, and it is my purpose to tell how the physician can make it much easier for the uroligist to carry out his work. There are three reasons for failure. The first is the introduction of infections into the bladder, strep, staph, or the very persistent type of colon bacilli. Second, the inadequate or inaccurate removal of obstructing tissue. This part of the problem is the urologist's part. He must have an adequate type of equipment and skill before he performs the operation. Regarding infection, the man who first sees the patient at home, if he uses sterile technique in the introduction

of catheters, can do much to prevent infections. This is especially true where catheterization has to be done once or twice a day. Dr. Rose of St. Louis perhaps should have more credit in his study in connection with the continuous urethral catheter. A continuous urethral catheter has much the advantage of repeated introductions. If the patient does not have to be catheterized and you can estimate the obstruction which is causing retention of the urine, it is well for you to send that patient in to your urologist and have him visualize it. It may not be a case for resection. It may be a case for prostatectomy. However, he can tell whether or not it is early malignancy. If you don't get the patient in time to resect that and give him the benefit of deep x-ray therapy, it will be too late. My third point is in connection with hemorrhage. In old men small transfusions of properly matched blood are a great advantage.

Dr. Halsell Fite: I want to commend Dr. Browne for this paper, because he has been very frank in admitting the trouble he has had. He really wrote a learned paper in which he tried to explain to the general practitioner the general status of this procedure, in a very unbiased way. I think the earliest men in popularizing this method of removal were just a little bit too enthusiastic about it. They made it appear to the general surgeon and everyone that this was a procedure in which the patient could just run right into the office and the urologist could take out his instruments and cut out the prostate and send him home. I have had two or three men come to me with that idea, that they could go home the same day. This is definitely not a procedure for the general surgeon, but for a trained urologist. You can't do it yourself, I don't believe; I think your mortality will be astounding. I think probably a trained urologist can accomplish fair results. Resections are done in patients where a prostatectomy is absolutely contra-indicated. I consider we save the patient the cost both in hospital and medical care; I consider we also save him time, and there will altogether be less shock and suffering to the patient in the long run.

Question: Is it possible to treat a carcinoma this way with any degree of success?

Dr. Browne: I want to thank Drs. Fite and Akins for their discussion. As this procedure becomes more known to the general public, it is the early cases we are going to get, and in these prostatic resections the patients hardly know they have been operated on. We used to put them off and tell them they were not bad enough to be operated upon when we were doing prostatectomies but with this we can go in and resect the prostate with very little discomfort to the patient. About the question of carcinoma, resection is excellent in restoring the urination. You resect them and they will go on six or eight months urinating in good fashion and thus their last days will be made more comfortable. You can give deep x-ray therapy or radium along, but you can make them comfortable by re-establishing the urinary function for a number of months. I have the utmost respect for this procedure. That loop will cut, and just remember, it will cut clear through the bladder wall or through the urethra if it cuts in the wrong place. You should know where it is at all times, or your patient will be dead or worse off than before operation.

THE OKLAHOMA CITY CLINICAL CONFERENCE

On the front cover page of this issue is an announcement of the meeting of the Oklahoma City Clinical Conference to be held November 4, 5, 6, 7, and the names of the sixteen distinguished guest lecturers indicate another very interesting and instructive program as the list is composed of men of international reputation in their respective lines.

The post graduate symposia presented by the doctors of Oklahoma City cover a large field of very important subjects and will be ably presented.

The social features include the President's dinner given by the Oklahoma County Medical Society for the President of the American Medical Association, Dr. James S. McLester. This will be held Monday evening. The annual Clinic dinner will be held Tuesday evening, a public meeting Wednesday evening and the annual Clinic Smoker, following the public meeting, all promise excellent programs.

Reducing the Mortality Rate in Cases of Perforated Appendices*

J. T. COLWICK, M.D.
THE COLWICK CLINIC AND DURANT HOSPITAL
DURANT, OKLAHOMA

A pre-eminent fact is that all of us have been seeing many cases of acute appendicitis with perforation, resulting in local peritonitis, appendiceal abscess, general peritonitis, and numerous other complications and sequellae.

In our particular location, we believe that the following are important factors as causes of delay in seeking proper surgical attention, resulting in most instances in perforation:

1. Delayed medical attention due to experts in "home treatment."
2. Failure of early diagnosis.
3. Failure of the family physician to properly impress the patient and relatives with the risks of trying to avoid operation.
4. Belief that the treatment of appendicitis is medical, particularly by purgation, on the part of some practitioners.
5. Fear of the anaesthetic or operation on the part of the patient.
6. Belief by some practitioners that the operation is a greater risk for the patient than the disease.
7. Difficulties in transportation because of weather conditions and roads, as we draw from within a radius of forty-five miles.
8. Among thrifty, honest people the present economic situation results in delay, as they hope that an operation will not be necessary.

One or more of the above reasons have been given to us at one time or another.

We do not feel presumptuous in saying that delayed hospitalization and purgation account for ninety per cent of the mortality in appendicitis. Eventually, education will reduce this immeasurably, but until such time our efforts must be directed toward the handling of these cases in such a manner that the mortality attributable to the operation, the surgeon, his judgment, and post-operative management will be cut to the minimum of the uncomplicated cases.

It has been said that when the operation is completed the patient's fate is sealed. We have not subscribed to this belief. A chance remark by a colleague concerning a probable reduction in our mortality rate in perforated cases during the past ten years has led us to analyze our cases, and with the exception of the addition of two surgical procedures, our operative technique has been a constant factor. Our post-operative management has changed greatly and it is to this that we attribute our progress and improvement in the mortality rate of these cases.

We believe that, in addition to colpotomy drainage and appendicostomy, the following procedures are of extreme importance: (1) Intravenous fluids, (2) duodenal drainage, and (3) administration of morphine and pitressin.

In the years 1920-1925 we operated 455 cases in the above catagory and there were seventy-nine deaths, a mortality rate of 17.3 per cent. Among these there was one death from pneumonia and one from pulmonary embolism. These were treated by drainage; twenty-four had jejunostomy and an haphazard administration of fluids, and limited irregular use of morphine.

From 1925 through 1933, we operated 368 cases of perforation with thirty-five deaths, a mortality of 9.5 per cent. All of these had appendicostomy and sixteen females had colpotomy drainage. Jejunostomy was resorted to in eleven cases, a de-

*Read before the Surgical Section, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May, 1935.

crease of 2.3 per cent. In reviewing this period, particularly the first years, distention was not adequately controlled, fluids were administered inconsistently, and morphine was not used judiciously.

Thirty-six cases have been operated upon from January, 1934, to April, 1935, with two deaths, a mortality of 5.5 per cent. No jejunostomies have been done. Our operative technique has been the same, but we have administered fluids, used duodenal drainage, and have administered morphine and pitressin consistently, as outlined below, in a definite, purposeful manner. We appreciate the fact that such a small series of cases does not present a basis to form definite conclusions as yet.

If an enterostomy is to be done, the ideal time to do it is at the time of operation and not wait until the patient is moribund and use the measure as a last resort. By its use, the general abdominal distention may be relieved, but the tube soon drains only the immediate region of its insertion, as the remainder of the intestinal tract has become paretic from thrombosis, and the toxemia, the result of the absorption of split proteins, finally overwhelms the patient. Appendicostomy as a prophylactic measure is very much more effective than enterostomy undertaken late to relieve symptoms arising from a pathology already beyond mortal control. In addition, in female patients, the cul-de-sac is drained by rubber tubing through a colpotomy.

Since 1925, the above procedures have been the only addition to our operative technique. In respect to the appendicostomy we have been using the following procedure. The appendix is identified and removed, a number 12-14 French catheter is passed through its opening into the coecum and if possible, through the ileocoecal valve into the ilium, and is fastened through the appendiceal stump with catgut.

This provides drainage and decompression of the lower small bowel and a portion of the colon. Through it normal saline is given in repeated small doses and is no insignificant factor in maintaining the water, acid-base and electrolytic balance.

In the past, it has been generally understood the cases developing a fecal fistula resulted in a lowering of the mortality rate. We did not adopt this procedure to that end, but from observation in the Hochenegg Clinic at Vienna. It is simple, is done with a minimum of manipulation and trauma and is physiological in its action. It can be removed from the fifth to tenth day and in our cases we have had no persistent fistulae.

Post-operative distention may subside spontaneously, but where it increases, or even does not subside, we have a dangerous situation; but one where relief of a symptom will relieve the cause. When intra-intestinal pressure reaches approximately sixty mm. of mercury, complete block of the circulation of the jejunum and ileum will result. A less acute distention will cause some impairment on the venous side of the circulation. In ileus there is a dysfunction of the water balance control mechanism and an accumulation of fluid in the small bowels this fluid making up a considerable portion of the distention. This can be relieved by removing the excess fluid in the small bowel.

While the patient is still anaesthetized we pass about seventy cm. of a lubricated Levine tube through the nose into the stomach. This allows the sufficient tubing for the end to be carried into the duodenum by peristalsis. This is secured in position by two adhesive strips fastened to the cheeks. By doing this before the patients reacts from the anaesthetic we have anticipated and prevented post-operative nausea; we have evaded any reluctance on the part of the patient or any psychological barriers that might develop regarding swallowing and retaining the tube. Gagging and the induction of vomiting with its committent strain have been prevented. A patient awakening and finding the tube in place is usually satisfied to allow it to remain.

This tube is allowed to drain into a bedside bottle. It is irrigated every two hours to maintain patentcy and suction is applied at similar intervals by means of a syringe and if productive at any time is continued until no fluid can be aspirated. In our limited number of cases we have not found it necessary to use a suction-syphon apparatus to provide continuous suction.

When in the stomach the tube drains

gas, mucus, saliva, and the regurgitated materials from the small bowel and brings up swallowed air and liquids as fast as they are ingested. Nausea and vomiting are prevented. After the tube passes into the duodenum the toxic material, stagnant bile, etc., are all siphoned off. The upper abdomen becomes or remains flat, relieving or preventing distention and thus giving the bowel a better chance to resume or maintain its normal peristalsis.

Since our use of this procedure we have not found it necessary to do a jejunostomy.

Prime considerations in the treatment of these patients are dehydration from vomiting and sweating and decreased fluid intake; nutritional paupacy from decreased intake and increased metabolic rate due to the fever, toxemia; and the maintenance of the chemical balance of the blood. In our hands ten per cent glucose in normal saline has served this purpose.

Oral administration is obviously impractical. Rectal administration limits the quantity and quality of fluids that can be given. Glucose may be irritating in certain cases and in a concentration above five per cent its osmotic pressure is above that of the tissue fluids; and both of these factors may inhibit water absorption. It is questionable whether the amount of glucose that can be absorbed through the colon is of any clinical value. Fluids given by this route in a desirable quantity may stimulate activity of the lower bowel.

Subcutaneous administration is slow, painful to the patient and there is always the danger of infection and slough. To provide isotonicity the concentration of glucose must be that of five percent, consequently, the amount that can be given does not justify the discomfort and risk. In the presence of circulatory collapse this method is of little use.

We believe the most direct route of administration to be the most efficacious, namely, the intravenous infusion. Two to five thousand cc. of ten per cent glucose in normal saline are given daily, slowly, at temperature of 105 degrees F., and using the commercial Vacoliter preparation, reactions are very infrequent. This overcomes dehydration, provides nutrition, restores blood chlorides and stimulates the circulation and kidneys.

Occasionally, as indicated by a failing myocardium, or diminution of kidney function, or extremes of nutritional deficiency, the above is augmented by the intravenous injection of fifty to one hundred cc. of fifty per cent glucose, given one or two times daily is conditions may demand.

Morphine in adequate dosage not only allays pain and fear, quiets the patient, and is conducive to the most necessary rest, but also increases the tone of the rhythmic activity of the intestine. This, combined with the effect of the maintenance of chemical and water balance, upon the tonicity of the intestinal musculature, aids in controlling over-distention much better than formerly. We give one-eighth to one-sixth grains of morphine every four hours straight, complimented by one-sixth grain doses if necessary for pain and restlessness. To augment this we also use pitressin. This is given in a one cc. dose immediately before operation and one-half cc. doses every six hours when and as long as indicated. It does not seem to be followed by any clinical evidence of relaxation of the bowel, and its antidiuretic effect may favor a longer retention of the fluids particularly administered by the intravenous route.

No cathartics are given at any time. If the patient is progressing nicely, a compound enema is given after five or six days to prevent fecal impaction.

It is obvious that prevention is the best cure for these cases, but it is hopeless to expect the necessary education of the public and profession to take place over night. Until such time comes, when we are dealing with the uncomplicated cases of acute appendicitis only, we believe that the consistent, purposeful application of the above procedures will in part, at least, fulfill the surgeon's responsibility in the management of the perforated appendix.

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* * *

DISCUSSION

Dr. C. E. Clymer: I have very little to add. I want to thank Dr. Colwick. He had a most excellently presented paper. We have not used pitressin. We think that in probably all cases of perforated appendices, a great deal depends upon what the surgeon does at the time of operation about staying well within the right lower quadrant, being sure that he doesn't contaminate the field, removing the appendix if convenient, and if not, draining. We use the Levine tube for distention. We feel that the placing of the Levine tube causes much less discomfort. We feed plenty of the tube into the stomach until it seems to have gone down into the duodenum. We do not give anything by mouth for forty-eight hours. We give morphine, not every four hours, but we give it as necessary to control the pain and discomfort if it is every hour, and the amount is not considered except we watch that the respiration is not lower than twelve or fourteen. We use continuous hot packs to the abdomen. We give the adult two thousand cc. of salt solution subcutaneously at night and two thousand in the morning. We give glucose intravenously sufficient for the food value. We give nothing by mouth. If we are using the Levine tube we feel that the patient can drink fluid if he wants to but we use continuous suction drainage. If he swallows a little soda pop it kicks right back up the bottle, and we know our suction is continuously working. We do not have to do enterostomies as we used to. We found before that there were fatalities in a great many cases because they segmented. At autopsy we would find perhaps two or three feet segmented off, with a kink. With the Levine tube we don't have occasion to do enterostomies, and have not done any for considerably over a year. We get a great many extremely late cases in service at the University Hospital, and in a great many of these cases we don't do anything. But that is the line of treatment we follow out at the University. I don't know anything about pitressin. I want to emphasize this—morphine should be given sufficiently to stop the pain, and then, too, we use, of course, the hypodermoclysis and our glucose sufficient for food value.

Dr. H. Dale Collins: I wish to congratulate the author of this paper and to compliment him on the results of his treatment. If more of us became conscious of this existing plague, our death rate would be smaller.

The perforated appendix offers a problem which confronts every practitioner of medicine far too frequently.

The problem of management is not yet a standard procedure but we are beginning to agree on certain proven measures that are of value. We agree that the individual with a ruptured appendix should have no fluid by mouth but should be given from three thousand to four thousand cc. of fluid daily by venoclysis or hypodermoclysis. We agree again that these cases are greatly benefited by the use of the Levine tube and the continuous suction siphonage. This procedure empties the stomach and upper small intestine of toxic material, relieves distention and, in this manner, tends to overcome the paralytic ileus. We agree on the judicious use of morphine. It should be given regularly, in quantities sufficient to control pain, relieve restlessness and quiet mental anxiety. Morphine, in the ordinary doses, has been proven to be a mild stimulant to peristalsis.

We are now reviewing the case records of all the cases of appendicitis, admitted to the University Hospital This work is yet incomplete as there have been over five thousand cases since 1921 and you can well imagine what a task it is to analyze this large number of cases. However, I do have some figures for the years 1932-1934 which may be of interest. We had a total of eight hundred fifty-two cases admitted. From this number, we had one hundred one ruptured upon admission. The mortality is approximately twenty-five per cent in these ruptured cases. This is a higher percentage than that reported by Dr. Colwick but I believe there is an explanation for this increase. We have practically no

cases from Oklahoma County. These cases are treated in other city hospitals. Our admissions come from a distance, sometimes one hundred fifty to two hundred miles. They have been juggled about during their long drive and we know that these cases have a much more guarded prognosis than those who have been more gently handled. Purgation plays a profound part in ruptured appendicitis. We have found in our cases, with such a diagnosis, that eighty five per cent have had cathartics and the majority have had them repeatedly.

We classify cases of ruptured appendicitis into groups and treat according to that classification. If we find we are dealing with a recently ruptured appendix, we operate immediately and remove the appendix, if it is not apt to traumatize the surrounding protective zone which has been set up. If the case is one wherein localization is developing, we allow the abscess to form and then drain.

The terrible class of these cases is the ruptured appendix with a fulminating spreading generalized peritonitis. These cases are treated conservatively and not operated until infection becomes localized.

We must continue to educate the laity and also some of our fellow practitioners about the necessity for early diagnosis and early operation and the danger of catharsis in treatment of appendicitis.

Important Announcement to Physicians and Hospitals

The following announcement is published in The Journal as it should be of interest to our members who anticipate practice in the Public Works Administration cases. Having had personal experience with many returned reports and bills I feel that this information will simplify the practice for those who participate in this work.

Due to physicians' unfamiliarity with government requirements in submitting charges, more than fifty thousand accounts submitted by physicians and hospitals in Civil Works Administration injury cases were returned for correction, or held for further information, necessitating undue delay in payment, because of one or more discrepancies.

As a former supervising auditor of the U. S. Employees' Compensation Commission I have condensed to a four-page booklet under the title "Instructions to Physicians and Hospitals for Submitting Charges in Federal Injury Cases," the numerous requirements scattered throughout sixty detailed pages of the government's regulations, each point being separately paragraphed and headed for the most convenient reference. The following points are covered:

Authority for treatment.
Medical and x-ray reports.
X-Ray films.
Charges in disease cases.
Post mortem examinations.
Dental charges.
Charges for drugs.
Charges for appliances.
Physicians owning hospitals.
Payment for personal property.
Submission of x-ray charges.
Charges for blood.
Itemization of accounts.
When to submit charges.
Joint accounts.
Required signatures.
Hospital charges.
Nurses' charges.
Assistants' and consultants' services.

In addition to the foregoing the booklet covers several important points such as inquiry as to payment of accounts, time required for receipt of remittances after payment is authorized, how charges may be expedited for payment, and other valuable information to physicians and hospitals having charges in Federal injury cases.

This booklet is neatly prepared, has durable cover, and is convenient for pocket or office use. It is an accurate and ready reference, covering every requirement, a guide to cooperation and the avenue to correct submission and the earliest possible payment of accounts. This guide will save time, money, worry and waiting.

With an increasing number of people being employed subject to government compensation benefits, and with the near possibility of an added number of physicians being called upon to serve their government as a result of recent social legislation, every physician should familiarize himself with government requirements in respect to charges.

Price: $1.00 the copy, postpaid. The price is negligible in comparison with the booklet's practical and beneficial value. Order now.

C. B. Riddle.

Washington, D. C., P. O. Box 442.

Robinson Clinic Announces Neurological Hospital

Note the change in the advertisement of the Robinson Clinic, page xxvii, with Dr. G. Wilse Robinson as Medical Director and Dr. G. Wilse Robinson, Jr., as Superintendent. The new hospital will be known as the Neurological Hospital and although this will be operated by the Robinson Clinic there will an open staff.

The plans for this institution are to develop a physiotherapy department, complete in every particular and a private school for paralyzed children. A fire-proof construction is being instituted with specially constructed windows without bars; this will make the guests feel that they are not confined and give them a sense of freedom which can be felt under no other circumstances.

The building is expected to be ready for occupancy about October 10th.

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DR. T. H. McCARLEY.....Associate Editor
McAlester, Oklahoma

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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EDITORIAL

SOCIALIZED MEDICINE

The late Herbert Hadley, former governor of Missouri, in his book "Rome and the World Today" drew the following conclusions: "Destroying the right of private ownership of property, denying to a man of talent and ability the right to advancement or extra reward for his services, brought upon the Roman world a social, industrial and economic breakdown that was the natural result of these efforts to run counter to the inflexible rules of human nature and the inexorable laws of supply and demand. Hope and ambition were banished from the hearts and minds of men."

In 301 A. D. the Roman Emperor promulgated an edict fixing a maximum price for provisions, and other articles of commerce, and a maximum wage for every service, whether by a common laborer, an experienced lawyer or physician. There was but one penalty for a violation of the edict and that was death, both for the one who asked for an excess of the official price and for the one who paid it. Trade was thus forbidden to fluctuate exactly as now and no allowances were made for differences of conditions of production or transportation. The end was that the machinery of government in the fifth century became so cumbersome and so complicated that in the increasing incapacity and disorganization of those times it almost ceased to function. Thus ancient Rome died and the practice of establishing a new bureau or commission to deal with every new problem of government or to correct every real or imagined evil has been the outstanding earmark of the "new deal." The result has been the creation of a vast, burdensome and costly bureaucracy.

The foregoing is culled from the writings of Raymond G. Carroll in the Saturday Evening Post of July 20, 1935.

Quoting from Attorney-General Crim: "Unless there is a halt in this tendency to saddle all responsibilities on the Federal Government, the time will come when we will have in Washington a bureaucracy knowing no master—and one day the country will be in ruins." The centralization of power, whether in industry, commerce, education or the trades or professions if granted to a bureau or individual, will set up an oligarchy which will create and foster bolshevism.

Announcement has been made by the Julius Rosenwald Fund that they propose to expend twenty-eight per cent of a million dollars during the coming year for the furthering of socialized medicine.

The Journal of the American Medical Association commenting on this matter says: "Trustees of the Julius Rosenwald Fund voted yesterday an appropriation of $284,000 to be expended in the fiscal year beginning July 1st for welfare work and rural education among colored persons, and for further socialized medicine."

Edward R. Embree, President of the Fund, said that the Rosenwald effort to place competent medical service and hos-

pitalization within the reach of persons of moderate means paralleled the program of the medical profession. He quoted Michael M. Davis of the Fund's medical division as reporting that three hundred forty-four plans to cut the cost of medical care, or to make it easier for the average family to pay for it, had come to his office the past year. Certain of these projects, he said, had been endorsed in principle by the American College of Surgeons.

The medical profession should be aware of this propaganda in behalf of state medicine. In the crystallization of public opinion, physicians will do well to bring the point of view of the medical profession to the attention of their patients, women's clubs, chambers of commerce and similar organizations.

In a previous editorial it was shown as to what socialized medicine has done for both patient and physician in Russia, Germany and England, and Senator Henry J. Allen, in a recent address described the result in Germany and England under this form of *medicine* which he had observed during trips abroad in recent years.

He declared that Germany had discovered under state medicine that diseases have multiplied alarmingly because of constant malingering and the load is reaching far above the estimation of the original proponents. Senator Allen said further that the keen ability of the profession in this country should be sufficient to save this country from the disaster that has befallen it in England, Germany, Austria, Poland, Italy and other countries of Western Europe where medicine is practiced under direction and payroll of the state.

The danger in America is imminent. One-fifth of the people are now beneficiaries of the United States government. Sentimentalism will be used to extend the social phases of government to make the practice of medicine a function of the state. Senator Allen said that "the medical profession in the United States must lead the way to a middle ground. I can't help but believe the profession will be able to work out a modified answer, but medicine cannot hope to be left untouched; some changes will have to be made. There is no field of human activity in the United States that is so challenged to change as the practice of medicine. The great thing we call private practice has reached a plane in the United States that is worth saving but the problems facing the medical profession will not solve themselves. An intelligent solution must come from within the profession."

Editorial Notes—Personal and General

DR. CHAS. M. PEARCE, State Health Commissioner, Olahoma City, announces there will be an immediate start on malaria projects throughout the State. Going hand in hand with this malarial elimination project there will be a sanitation project which will help materially in typhoid control.

DR. MARVIN D. HENLEY, Tulsa, attended the Academy of Ophthalmology and Otolaryngology in Cincinnati in September.

DR. and MRS. McLAIN ROGERS, Clinton, had as their guests in September, DR. and MRS. C. A. THOMAS of Tucson, Arizona. Dr. Thomas, it will be remembered, gave a very interesting address on tubercular subjects at our Annual Meeting in Tulsa in 1934.

DR. L. A. MITCHELL, Stillwater, announces that DR. POWELL E. FRY will be associated with him in the practice of medicine.

DR. J. T. LOONEY, Tishomingo, has been appointed Health Officer of Johnston County.

DR. and MRS. C. S. WALLACE, Holdenville, have returned from Galveston where they have been vacationing.

DR. and MRS. E. HALSELL, and children, Muskogee, have returned from Haven Beach, Florida, where they spent the latter part of August.

DR. J. HUTCHINGS WHITE, Muskogee, has returned after visiting points in Philadelphia and Virginia.

DR. PAUL SANGER, former Yukon physician, has been appointed camp physician at a CCC camp at Ft. Reno.

DR. and MRS. G. GARABEDIAN, Tulsa, have returned from a visit in Memphis, Tenn.

DR. L. S. WILLOUR, McAlester, spent the latter part of August in San Antonio and Aransas Pass, where he tried his hand at deep sea fishing.

DR. and MRS. C. A. HICKS, Wetumka, have returned from Colorado Springs where they spent the latter part of September.

DR. C. V. RICE, Muskogee, announces the removal of his office from the Barnes building to 1620 West Okmulgee Avenue.

DR. GEO. A. HEFFERNON, Seminole, has gone to Detroit and Chicago where he will do some

special work preparatory to becoming associated with Dr. Curt Von Wedel, Oklahoma City.

DR. PAUL V. ANNADOWN, Sulphur, has been named physician for Oklahoma A. & M. College.

DR. NELSON ROLLE, Custer City, announces his removal to Poteau where he will be associated with Dr. S. D. Bevill.

DR. E. ELDON BAUM, Jennings, announces his removal to Afton.

DR. GUY CLARK, Milburn, is vacationing in New Mexico.

DR. E. S. FERGUSON and son, John Haven Ferguson, Oklahoma City, have returned from Honolulu where they spent their vacation in August.

DRS. J. C. BROGDEN and H. D. MURDOCK, Tulsa, have returned from a short fishing trip to Corpus Christi, Texas.

DR. PIERRE N. CHARBONNET, Tulsa, has returned from a West Indies Cruise.

DR. and MRS. J. F. MARTIN, Stillwater, have returned from a vacation trip to Carlsbad Caverns in New Mexico and points in Southern Texas.

DR. and MRS. A. S. RISSER, and children, Blackwell, spent the latter part of August in Minneapolis, Minn.

DR. and MRS. D. W. DARWIN, Woodward, spent September in Woodland Park and Carlsbad Caverns in New Mexico.

DR. L. G. LIVINGSTON, Cordell, has received from the Federal Government a commission as captain in the United States Army Medical Corps Reserve.

DR. and MRS. SAMUEL R. CUNNINGHAM, Oklahoma City, have returned from Rancho Dias de Alegres near Las Vegas, New Mexico, where they spent two weeks in September.

DR. and MRS. P. B. MYERS, El Reno, have returned from a vacation trip to points in Colorado and New Mexico.

DR. LYMAN C. VEAZEY, Ardmore, announces the association of DR. J. HOBSON VEAZEY (formerly of Madill), in the practice of medicine and surgery. Dr. J. H. Veazey recently returned from New York where he has been doing post graduate work. Their new address is 608-610 Simpson Building, Ardmore.

DR. E. H. COACHMAN, Muskogee, announces the opening of his new office, 800-1-2 Manhattan Building. Dr. Coachman, former resident surgeon, New Orleans Eye, Ear, Nose and Throat Hospital.

THE McBRIDE CLINIC and RECONSTRUCTION HOSPITAL, 717-723 North Robinson, Oklahoma City, announce FREDERICK H. MANN as Director of Postural and Medical Gymnastics in the department of Physical Therapy and MURIEL Y. EKREM MANN as Masseuse and Hydrotherapist. Mr. and Mrs. Mann were formerly at the Battle Creek Sanatorium.

DRS. J. G. and SAM BINKLEY, Oklahoma City, announce the opening of a joint office at 804-805 Medical Arts Building. Dr. Sam Binkley has recently returned from New York City where he took post graduate study in cancer surgery at Memorial Hospital.

DR. and MRS. J. O. LOWE, and children, Tulsa, have returned from Basswood Lodge, Ely, Minn., where they spent the month of August.

DR. and MRS. J. S. ALLISON, Tahlequah, have returned from a vacation spent in Colorado.

DR. and MRS. N. W. MILLS, Snomac, spent August in Mississippi.

DR. and MRS. F. W. REWERTS, Bartlesville, spent several weeks in August visiting in Colorado.

DR. and MRS. L. G. NEAL and family, Ponca City, have returned from New Mexico and neighboring states where they spent several weeks in August.

DR. C. W. WILLIAMS and son Carl, Woodward, visited in Kansas, Iowa and points in Minnesota in September.

DR. and MRS. G. A. KILPATRICK, Henryetta, announce the marriage of their daughter, Dorothy Lu, to Lieut. Charles Miller of Sandea Park, New Mexico, son of Mr. and Mrs. Walton J. Miller of Sapulpa, September 5th. They left immediately after the ceremony for their home in New Mexico.

DR and MRS. H. K. SPEED, Sayre, announce the marriage of their son, Dr. Henry Kirvin Speed, Jr., to Miss Ruth Armstrong, daughter of Mr. and Mrs. H. H. Armstrong of Norman. Following a trip to points in Texas, Dr. and Mrs. Speed, Jr. will be at home in Sayre.

News of the County Medical Societies

LINCOLN County Medical Society met at Chandler September 4th for their first fall meeting. After seven o'clock dinner a round table discussion followed the reading of a paper by Dr. Ned Burleson of Prague. Dr. Carl H. Bailey, Stroud, whose application for membership, previously presented, was accepted at this meeting.

SOUTHERN Oklahoma Medical Association members were guests of Central Oklahoma State Hospital Staff and Cleveland County Medical Association September 3rd when they held their twenty-eighth quarterly session. After registration, ward walks and clinics, and luncheon at noon, the following program was rendered during the afternoon: "Welcome Address" by Dr. James O. Hood, Norman; "The Laws of Oklahoma in Relation to Public Health Program" by Dr. B. H. Cooley, Norman; "The Minor Psychoses," Dr. J. J. Gable, Norman; "The Use of Iodized Oil in Treatment of Asthma" by Dr. Ray M. Balyeat, Oklahoma City; "Symposium on the Heart and Interpretation of the Electrocardiogram" by Drs. Wann Langston and Mulvey, both of Oklahoma City; "Sterilization as Applied to the Insane" by Dr. C. A. Steen, Norman.

WOODS-ALFALFA County Medical Societies held their first fall meeting September 24 at Cherokee. Drs. E. Goldfain and E. Margo, Oklahoma City, read papers on "Management of the Gastro-Intestinal Tract in Chronic Arthritis" and "Low Back Pains," respectively.

DR. FOREST SNOWDEN KING

Dr. King passed away at his home in Muskogee August 5th, 1935, after an illness of several months. He was born in Lamartine, Pa., July 12th, 1880. Dr. King graduated in medicine at the University of Pittsburgh in 1907 and located in Pryor, Oklahoma, in 1908 where he owned and operated the Palace Drug Store. After practicing five years in Pryor he spent two years in Chicago and New York where he completed his special work in eye, ear, nose and throat, locating in Muskogee in 1915, at which time he formed a partnership with Dr. W. B. Newton.

Dr. King was a member of the First Presbyterian Church, the Rotary Club, the Woodmen of the World, Muskogee Lodge No. 28 A. F. & A. M., the Consistory and Bedouin Temple.

Funeral services were conducted from the First Presbyterian Church, Dr. B. D. Weeks, president of Bacone College, officiating. Dr. Weeks paid a beautiful tribute to the medical profession and in speaking of Dr. King he used the Biblical expression, "He saved others; himself he could not save."

Dr. King was held in high esteem by the medical profession and his passing will be keenly felt by a large circle of friends. He is survived by his wife and one daughter, Marjorie. Interment was at Greenhill Cemetery, Muskogee.

DOCTOR JAMES M. MATENLEE

Dr. J. M. Matenlee, Sapulpa, died June 26, while visiting relatives in Oklahoma City.

He was born at Vandalia, Illinois, October 21st, 1864. Greaduated from Beaumont Medical College, St. Louis, Mo., in 1889. He was Examiner for the Knights of Pythias and proprietor of the Matenlee Sanitarium for the treatment of liquor and drug addictions at Carthage, Mo. He moved to Sapulpa in 1907 and was active in the practice of medicine until failing health compelled him to retire in December, 1934. He was Past President and always an active member of Creek County Medical Society. Also Past Master of Knights Templar and a Shriner.

He is survived by a son and one daughter.

Burial was by cremation in Kansas City.

DOCTOR OLLIE H. PARKER

Dr. O. H. Parker, Custer City, died at his home July 9th, following a long illness.

Dr. Parker was born in 1872, and has been a resident of Custer City for twenty-seven years and has practiced medicine in Custer County since 1903. He was county health superintendent of this county for six years.

He is survived by his widow and three daughters and one son.

DOCTOR MARTHA JANE BLEDSOE

Dr. Martha Jane Bledsoe, Chickasha, died July 3, 1935. She was born September 19, 1862, in Lafayette, Indiana. She received her medical education in the State University of Iowa at Keokuk, graduating in May, 1906. Since that time she has made her home in Chickasha where she was active in civic affairs and was organizer and past president of the Business and Professional Women's Club of Chickasha. She was also in the Volunteer Medical Service Corps during the World War.

Funeral services were conducted from the First Methodist Church of Chickasha, with interment at the Rose Hill Cemetery. There were no immediate relatives surviving.

DOCTOR ALVA JONES

Dr. Alva Jones, Sapulpa, died August 1, after a short illness.

Dr. Jones was born in Fordsville, Ky. In 1893 he was graduated from the Kentucky School of Medicine, interned in one of the New York hospitals, later locating in Monett, Mo., where in 1906 he married Miss Fanny Williams.

Dr. Jones came to Sapulpa twelve years ago and has devoted his practice to the treatment of the eye, ear, nose and throat until the time of his death.

He is survived by his widow, mother, and two sons.

Funeral services were conducted in Monett, Mo., where interment took place.

The True Economy of Dextri-Maltose

It is interesting to note that a fair average of the length of time an infant receives Dextri-Maltose is five months; that these five months are the most critical of the baby's life; that the difference in cost to the mother between Dextri-Maltose and the very cheapest carbohydrate, at most is only $6 for this entire period—a few cents a day; that, in the end, it costs the mother less to employ regular medical attendance for her baby than to attempt to do her own feeding, which in numerous cases leads to a seriously sick baby, eventually requiring the most costly medical attendance.

Progressive Atlanto-Axial Dislocation

Edgar A. Kahn and Luis Yglesias Ann Arbor, Mich. (Journal A. M. A., August 3, 1935), regard forward displacement of the atlas on the axis with fracture of the odontoid process as a progressive lesion. They believe that one should not be lulled into a false sense of security following a symptom-free interval on conservative treatment. During the course of conservative treatment, should evidence of progression be found, occipitocervical fusion is indicated before pressure myelitis develops. If pressure symptoms develop, removal of the arch of the atlas, ordinarily followed by bony fusion of the occiput to the cervical spine, is the treatment of choice.

ABSTRACTS : REVIEWS : COMMENTS *and* CORRESPONDENCE

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
717 North Robinson Street, Oklahoma City

Back Strain and Sciatica. Frank R. Ober. J. A. M. A., CIV, 1580, May 4, 1935.

Dr. Ober presents a new theory relating to the cause of lame back. He points out that the x-ray evidence of pathology in the sacro-iliac and lumbosacral regions makes it very difficult to decide upon a positive diagnosis. He has discovered that the iliotibial band is an important factor in producing back pain, with or without associated symptoms of sciatica. He describes the origin and insertion of the iliotibial band and points out the manner in which the tendon of the gluteus maximus muscle enters the posterior part of the iliotibial band.

The pathology and symptoms are discussed and the characteristic findings at examination are described.

Relief of the contracture is the essential factor in the treatment. In patients without sciatica, stretching exercises may relieve the pain. In those patients with severe sciatica, operation is indicated. The operation consists in transverse division of the fascia lata from below the anterior superior spine to the anterior border of the gluteus maximus muscle.

In several cases, the results of treatment were dramatic. In some instances the sciatica lasted from six to eight weeks. Thirteen patients have been operated upon with relief in all but one case.

Five cases are reported, in all of which the patients obtained relief from their symptoms.

What Should a Patient With Arthritis Eat? Walter Bauer. J. A. M. A., CIV, 1, Jan. 5, 1935.

The author takes up a very timely subject in regard to the diet of the arthritic patient. It is too often that the patient is not scientifically treated in this respect. He points out that there should be an accurate knowledge and diagnosis of the patient's condition and that the diet should be prescribed according to the indications. When the arthritic condition is specific or of known etiology, the diet should be prescribed as indicated for the particular disease in combatting the effects of the etiological agent. The author stresses particularly diet in gout and insists that the diet be low in purines. With the exception of gout, there is no specific diet for arthritis of known etiology. Arthritic conditions of unknown etiology include degenerative arthritis (hypertrophic), proliferative arthritis (rheumatoid arthritis), and rheumatic fever.

Degenerative or hypertrophic arthritis is considered by most authorities to be due to trauma. At autopsy, the knee joints show characteristic changes in the joint surfaces, which may be attributed to the "wear and tear" of age rather than to some inflammatory process, metabolic upset, or endocrine imbalance. In these patients, a diet which attempts to reduce the weight, but at the same time meets the caloric requirements of the body, is helpful in reducing trauma.

Proliferative or rheumatoid arthritis is characterized by proliferation of the synovia and connective tissues of the subchrondral spaces and round-cell infiltration. The process is not to be confused with the degenerative or hyper trophic type. It is important to remember the characteristic remissions and relapses which so frequently occur. A lapse of five years, preferably ten, should be allowed before a definite cure is pronounced. Numerous diets have been prescribed for rheumatoid arthritis. These include: (1) ommission of acid fruits and vegetables; (2) the taking of one type of food at a time (fat, protein or carbohydrate); (3) alteration of the acid-base balance of the diet; (4) omission of food to which patient is hypersensitive; (5) low-protein intake; (6) low-carbohydrate intake. In those cases where there is some food sensitivity, that food should certainly be removed from the diet, but these instances are rare. The other suggestions cited which have no physiological basis are contra-indicated. The proper diet is well balanced and sufficient in caloric and vitamin content to care for the body needs of the patient.

Congenital Dislocation of the Hip. Statistical Analysis. Arthur Steindler, Jacob Julowski and Ernest Freund, J. A. M. A., CIV, 302, Jan. 26, 1935.

The authors make a statistical report of 501 dislocated hips seen in 387 cases. They point out the end results obtained in using various surgical procedures. They consider the closed reduction the method of choice in unilateral cases up to five years of age and in bilateral cases up to six years of age. When difficulty is encountered in the closed reduction, they use the open operation as a supplementary measure. Results and indications for palliative operative procedures—such as shelf operations and osteotomies—are also given.

The authors stress particularly the fact that end results can only be evaluated after adolescence has been attained, as so frequently alterations are observed in the growth and shape of the acetabulum and head. Results usually become definitely worse in proportion to the duration of the observation period.

This is a timely and excellent presentation of one of the orthopaedic surgeon's greatest problems and is worthy of most careful consideration.

Treatment of Progressive Pseudohypertrophic Muscular Dystrophy. J. H. Kite. J. Med. Assn. Georgia, XXIV, 59, Feb 1935.

The author makes a differential diagnosis between the dystrophies and the atrophies in this type of disease and insists that they are two separate disease entities which require different forms of treatment. He reports forty-four cases of progressive muscular dystrophy, all of which were

males. Three-fourths of these patients begin to have symptoms before the age of five years. It has been found that the earlier the onset the poorer is the prognosis. Any illness which confines the patient to his bed or restricts his activities causes an increase in the severity of the symptoms; hence, casts and operative treatment are contra-indicated.

Six patients with progressive muscular dystrophy were treated with epinephrine and pilocarpine, and have been followed from one to two years. They showed a temporary improvement while under treatment and developed a certain amount of euphoria. It could not be said with any degree of certainty that a single case was arrested for a longer period than is sometimes observed in untreated cases. Certainly none of the patients were cured.

During the past two years, patients with progressive muscular dystrophy have been helped by feeding them glycine and other amino-acids. The literature has been reviewed and the results, obtained by various workers, warrant the further use of amino-acids.

Since there is so little that can be done for these unfortunate children, attention is called to these two new methods of treatment in the hope that they will be used by the family physician.

A bibliography is appended.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

At the meeting of the Paris Surgical Society June 19, 1935, there were some interesting reports. The following abstracts are based upon synopses by G. Cordier, and published in La Presse Medical, July 10, 1935.

1. Occlusion of the Small Intestine by a Non-biliary Calculus Composed of Oxalo-Phosphates (Occlusion de l'Intestin Grele par un Calcul non Biliaire de Nature Oxalo-Phosphatique). This report was by P. Mouloguet for Ho-Dac-Li of Hanoi.

A woman presented the evidences of acute intestinal obstruction. The general condition was grave. At operation it was found that there was complete occlusion of the intestine by a very large calculus which was removed by enterostomy. There were no evidences of disease of the bile tract area. The patient died two days after operation.

A chemical examination showed that the calculus was composed of oxyiate and phosphate of calcium. It appeared to be a true enterolith.

Comments: We have operated upon a patient who had a complete obstruction of the small intestine by an enterolith.

We operated upon another patient a number of years ago where there was complete occlusion of the small intestine by a mass made up of honey comb and green corn.

* * *

2. A Case of Traumatic Torsion of Sound Tube and Ovary (Un Cas de Torsion Traumatique des Annexes Saines). This case was reported by M. Picot for A. Charbounier and H. Brandt.

A girl of fifteen years about midway between menstrual periods fell on a stairway striking the stairs in a sitting position (tombe assise dans un escalier). There was immediate, more or less paroxysmal, progressive pain in abdomino-pelvic region. The next day there was vomiting. Digital examination per rectum disclosed a small, firm, tender mass in the region of cul-de-sac of Douglas. At operation two days after injury the right adnexae were found twisted ninety degrees.

The authors have found five similar reports in the literature. The usual symptoms are more or less paroxysmal pelvic pains without fever, together with the findings of a tender mass by rectal examination ("la constatation au toucher rectal d'une masse tres douloureuse dans le Douglas").

In the discussion, M. Arrou reported the finding of torsion of the right adnexae in the case of a young foreign woman ("chez une jeune etrangere") in which there was not, by a difficult interrogatory ("par un interrogatoire difficile"), any history of trauma.

M. Raoul and Charles Monod, continuing the discussion expressed doubt about any relation between trauma and torsion of the adnexae.

Comment: Taking into consideration the mechanics of torsion of the adnexal structures, it is our feeling that reports like this should be taken cum grano salis.

* * *

3. Cyst of Ovary Communicating Through the Tube with the Uterus. Hydrorrhea (Kyste de l'Ovaire Communiquant par la Trompe avec l'Uterus. Hydrorrhee).

M. A. Gosset, speaking for M. M. Ledoux-Lebard, P. Funch Bretano, E. Wallon and Jean Dalsace, reported the case of a woman characterized by abundant watery vaginal discharge and a mass of uncertain proportions in the pelvis. The patient was obese. At operation an enormous hydrosalpinx was found on the left side. It communicated with a cystic sub-peritoneal mass. The histo-pathological examination showed this mass to be a sclerotic ovarian cyst with intracystic ramifications, without evidence of malignancy.

LeRoy Long.

Intrathoracic Goiter. By Frank H. Lahey and N. W. Swinton. Surgery, Gynecology and Obstetrics, October, 1934.

This is an excellent, well illustrated article which should be read in the original for a complete understanding of the valuable points in diagnosis and treatment of intrathoracic goiter.

The authors conclude that any patient with mechanical interference to breathing should be suspected of having an intrathoracic goiter and should be subjected to an x-ray examination of the mediastinum.

In the presence of an intrathoracic goiter, deviation or flattening of the trachea either laterally or antero-posteriorally together with the mediastinal shadow can be demonstrated in practically all cases.

Dilatation of the superficial thoracic veins should always make one suspicious of the presence of an intrathoracic goiter.

Any goiter which is low-lying and tends to become intrathoracic should be removed before it becomes intrathoracic.

The introduction of a catheter between the vocal cords into the trachea makes the removal of large and difficult intrathoracic goiters infinitely more safe.

Statistics are given showing the incidence of Grade 1 and Grade 11 intrathoracic goiter. Figures are also submitted showing the age incidence, sex incidence, the incidence of pre-operative and post-operative laryngeal paralysis, the incidence of tracheal deviation or pressure, the incidence of obstructive symptoms, the duration of the goiter, the incidence of hyperthyroidism, the immediate post-operative complications and the mortality rate,

together with the cause of death in 21 cases in a group of 1,086 patients operated upon with partly intrathoracic goiter. LeRoy D. Long.

Diabetes and Hyperthyroidism. E. P. Joslin and Frank H. Lahey, Annals of Surgery, October, 1934.

These two men, who are outstanding in their respective fields, have been working together for many years. At the Deaconess Hospital in Boston they, perhaps, see more diabetic patients who have hyperthyroidism than are seen in any other clinic in the world. In 1928 they made a report about this combination of diseases.

Hyperthyroidism demands increased fuel intake to keep up with increased combustion, diabetes results in lessened ability to take care of increased fuel intake due to diminished pancreatic function.

Glycosuria is so related to hyperthyroidism that care must be taken not to make the diagnosis of true diabetes in hyperthyroidism when it actually does not exist. Raised blood sugar levels are suggested to avoid this error.

By increasing the percentage of two-stage operations in primary and secondary hyperthyroidism, respectively one hundred per cent and fifty per cent, the mortality of the first series in 1928, 4.8 per cent, has been reduced in this present reported series to 1.6.

The preparation of patients with hyperthyroidism and diabetes for operation is of extreme importance. No heroic attempt has been made preoperatively to make the urine completely sugar free with diet or insulin. Carbohydrates have been maintained at about one hundred grams, the proteins at approximately one gram, and the total calories not far from thirty per kilogram of body weight. Insulin has been given in small doses, usually five units, three or more times a day, and, if a prompt response to diet and insulin did not result—since hyperthyroidism increases the demand for insulin—the insulin has been increased to ten units or more at a dose and the frequency increased. Formerly they gave food within three hours after operation but this plan has been given up. Now no food is given within four hours of operation as it has been their experience that food given within this time remains in the stomach undigested and increases post-operative vomiting. By this plan one can advantageously begin to feed these patients sooner after operation. The dose of insulin before operation has always erred by being too small rather than too large. Post-operatively the frequency of dosage of insulin has seldom been increased except in the very severe cases, since they have found that the sudden increase in glycosuria after operation has been temporary, and unattended by any serious harm. Following operation every effort has been made to give as much as possible of the carbohydrates of the original diet employed pre-operatively.

Ten minims of iodine in the form of Lugol's solution has been given three times daily before operation. Since the publication of their first series in 1928, they have proven, particularly in patients who are vomiting post-operatively, that Lugol's solution may safely be introduced into the intravenous solution and given intravenously, together with the glucose and salt solution, insuring thus the constant effect of iodine regardless of post-operative gastric upset.

Following thyroid operations the severe post-operative thyroid storms are customarily treated by the intravenous employment of salt solution and glucose, and similarly in such cases complicated by diabetes, salt solution has been employed in large quantities with fifty to one hundred gm. of glucose in the twenty-four hours during the immediate post-operative period.

Attention is called to the need of avoiding unnecessary puncture for laboratory tests of the superficial veins in patients with hyperthyroidism and diabetes. As a means of avoiding such punctures, the employment of capillary blood from the ear, and the use of micro-blood sugars, is suggested.

The effect of hyperthyroidism on diabetes is to intensify the disease, as with infection, increasing the demands for insulin. Following the surgical relief from hyperthyroidism there is an increase in carbohydrate tolerance of thirty gm. or more and a marked diminution in the need for insulin.

LeRoy D. Long.

The Treatment of Cancer of the Breast and the Results of Operation. By Richard H. Overholt and Edwin C. Eckerson. New England Journal of Medicine, Vol. 211, No. 16, Pages 703-708, October 18, 1934—From the Department of Surgery, Lahey Clinic, Boston, Massachusetts.

These authors have made a study of the 719 patients who complained of, or were found to have breast lesions at the Lahey Clinic during the ten-year period of 1923 to 1933.

They lament the fact that by our present method of discovering and treating carcinoma of the breast, the most that can be promised is that one patient in every three will be alive five years later and one in every four will be well after the ten-year period. They feel that improvement of the results is considerably hampered by the visual conception of breast cancer based upon illustrations of breast carcinoma which are found in text books and articles on the subject in its late form. They devote considerable discussion to the value of a visual conception of breast cancer which includes the early lesion. "We should focus our attention on a normal appearing breast without dimpling or puckering or without nipple retraction. The presence of a palpable tumor should in itself be considered the classical sign."

Because chronic cystic mastitis is the most frequent lesion to be confused with malignancy of the breast, they have discussed their attitude toward this condition. "There is evidence that chronic cystic mastitis may predispose to mammary cancer." They quote Ewing and Cutler as to the frequency of association between chronic cystic mastitis and carcinoma. Overholt and Eckerson express their own opinion as follows: "We have found that twelve per cent of our cases of chronic cystic mastitis show considerable intraductal hyperplasia on microscopic examination. We prefer to consider intraductal hyperplasia in the chronic cystic breast as a pre-cancerous condition."

The working rule in the Lahey Clinic as to the treatment of various breast lesions is very similar to that in most good clinics but may be profitably reviewed.

1. Chronic cystic mastitis—"Discrete palpable tumors are excised and an immediate frozen section made."

"If there is no tumor present, or for vaguely defined areas of thickening in association with chronic cystic mastitis, we keep the patient under observation and follow at intervals of three to six months. If the area of thickening fails to disappear or becomes more pronounced exploration is advised."

"For bilateral chronic cystic mastitis, the so-called 'shotty' breast, which is uncomplicated by the presence of a discrete tumor or by the presence

of a nipple discharge, we do not for that lesion alone advise bilateral simple mastectomy."

"If there is a brownish or bloody nipple discharge and an intraductal papilloma cannot be demonstrated, clinically or by exploration, we believe a simple mastectomy should be performed. In our experience, carcinoma has been present in one-third of the cases showing a sanguinous discharge."

2. Benign tumors and cysts: "The clinical differentiation of benign tumors, cysts and early malignant lesions is often impossible. This difficulty is of little consequence, since any palpable lump in the breast should be removed and examined histologically." "The treatment of these various tumors beyond local excision depends entirely upon the histologic findings."

The general statistics in breast lesions during the ten-year period covered are interesting. Seven hundred nineteen patients complained of, or were found to have breast lesions. About a third, or 280 of these, were not operated upon. (Many of the unoperated cases had mild forms of bi-lateral chronic cystic mastitis and operation was not recommended.)

Another third, or 238, were operated upon and found to have a benign lesion. The most frequent benign lesion was chronic cystic mastitis.

A malignant lesion was found in 201 of the 719 cases. In other words, twenty-seven per cent of those who sought advice about breast lesion had a cancer of the breast.

The carcinoma of the breast statistics are then given. Of the operative cases all but four have been followed and there is included in the article a review of all the operated cases. A significant point is the fact that sixty per cent of all the deaths occurred within the first two years.

Five-year results for those patients operated upon during the first half of the ten-year period, or sixty-two patients, gives a survival of twenty-five, or forty per cent, who were living five years later without evidence of cancer.

In this group of cases, forty-eight per cent were found to have axillary involvement. Averages are quoted from other authors at about fifty per cent. Surprisingly in this series of the twenty-nine cases with lymph node involvement and operation, nine, or thirty-one per cent, were living without metastasis at the end of five years.

They have also considered the age factor. Many have discussed the belief that cancer of the breast in the young runs a much more rapidly fatal course than in older patients. They quote Lane-Claypon who has pointed out that, on the whole, there is no striking difference in age group and that prognosis in the young may be erroneous. In this series of patients the statistics agree with the Lane-Claypon point of view.

They conclude the article with a brief note upon the use of radiation. They have used post-operative intensive deep x-ray treatment in all carcinoma of the breast cases for the past eight years. Nothing is said about pre-operative x-ray.

"In women operated upon before the menopause, x-ray treatments are directed to the ovaries to produce an artificial menopause and thereby check the stimulation of breast tissue by ovarian harmone."

There is a brief note concerning the tremendous importance of systematic, careful follow up with proper attention to solitary recurrences in the scar or in accessible situations.

Comment: There is nothing particularly unusual about this report. Their results have been good, but they are about the same as will be found in all good surgical clinics. They express certain minor differences of opinion upon procedure and treatment. The most important feature of this article is the fact that it demonstrates a definite concensus of opinion toward uniformity in the diagnosis and treatment of all breast lesions. In the first place we are all thoroughly convinced that our results can be improved only by a visual conception of breast cancer which includes the early lesion. This indicates that dimpling or puckering or nipple retraction are not nearly so important in early diagnosis as a normal appearing breast with a palpable tumor.

It is impossible to divorce diagnosis and treatment of benign lesions and early malignant lesions. The attitude toward the treatment of benign lesions expressed in this paper is becoming a commonly accepted one.

It would be well to close this abstract with a tremendously important statement of these authors: "The clinical differentiation of benign tumors, cysts and early malignant lesions is often impossible. This difficulty is of little consequence, since any palpable lump in the breast should be removed and examined histologically."

Wendell Long.

INTERNAL MEDICINE

Edited by C. E. Bradley, M.D., Medical Arts Building, Tulsa; Hugh Jeter, M.D., 1200 North Walker, Oklahoma City

By C. E. BRADLEY, M.D.

Elimination Diets for Children. Clement B. P. Cobb, M.D., New York. American Journal of Diseases of Children, July, 1935, Vol. 50, Number 1, Pages 187-211.

Because the author feels that a set of non-allergic or elimination diets would be of great help to the physician treating patients with various allergic manifestations, he presents seven specific diets, with complete instructions for the patient's guidance as well as recipes for the special foods.

Elimination diets are particularly valuable when one considers that the scratch tests are not infallible indications of specific idiosyncrasies; that is, negative reactions to food often exist with clinical sensitivity. This can only be ascertained by trial and error methods which are often involved and even haphazard in some cases. The diets which the author presents are complete and may be roughly classified as follows:

Diets 1 and 2: Without milk, egg and wheat.
Diet 3: Without egg and wheat, with milk.
Diet 4: Without egg and milk, with wheat.
Diet 5: Without milk.
Diet 6: Without wheat.
Diet 7: Without egg.

Some investigators believe that in some patients sensitization to whole groups of foods, such as cereals, fruits, meats or vegetables occurs; these diets may be easily improvised to meet this contingency.

The author presents several factors upon which to base the selection of an appropriate trail diet to overcome various allergic symptoms such as eczema, angioneurotic edema, asthma, vasomotor rhinitis, urticaria, migraine, and rashes other than eczema. It has been shown that the greatest sensitivity to food is encountered in the second year, and after the sixth year the incidence is low. The following considerations will be of great benefit in selecting the suitable non-allergic diet:

1. A carefully taken history—with an attempt to determine the foods which the child does not like, or the ingestion of which causes

abdominal pain, vomiting, diarrhea, or the more common allergic reactions.

2. A "food diary"—a complete list of everything that passes the patient's mouth, with careful notations regarding the appearance of any allergic symptoms.
3. Scratch or intracutaneous tests—in the hands of those who are experienced in their use and interpretation. It is well to give tests for inhalents as well as for food stuffs, particularly in the "flexural type" of eczema.
4. Elimination diets.
   It is well to select diets three, four, five, six, or seven at first, with or without modifications as indicated. A trial period of two or three weeks is pursued. If progressive improvement with alleviation of symptoms occurs, a new food may be added every fourth day, and eliminated if there are signs of any symptoms recurring. It may be tried again at a later date.

   If these diets fail to give satisfactory results, then diets one or two should be tried. If these fail there is nothing left to do but put the patient on an exclusive diet of milk, two or three quarts daily, and work out special diets that eliminate entire groups of foods. Luckily these idiosyncrasies are relatively uncommon and may often be demonstrated by skin tests.

The diet lists are quite complete and palatable foods are suggested, and they should be beneficial to any physician who is encountered with allergic difficulties.

Spontaneous Hypoglycemia Due to Hyperinsulinism in a Child. Arthur M. Dannenberg M.D., M. A. Bell, M.D., and Benjamin Gouley, M.D. Philadelphia, Pa. The Journal of Pediatrics, July, 1935, Vol. 7, Number 1, Page 44.

Since 1924 hypoglycemia due to hyperinsulinism has aroused a great deal of interest. As early as 1914, Hilliger associated recurrent vomiting in children in which drowsiness and occasional convulsions occurred with hypoglycemia. Hypoglycemia has been mainly attributed to severe structural and functional changes in the liver, to neoplasm, and to hyperplasia of islet cells of the pancreas, and to inadequate secretion of the medulla of the adrenal cortex.

The dramatic suddenness with which an attack of hypoglycemia may occur in apparently well children is illustrated in the case reported by the author.

A thirteen month old male infant was admitted to the Jewish Hospital on December 1, 1931. The patient's history was irrevelant excepting for the fact that he was born one month prematurely and weighed four pounds at birth. He had had acute purulent otitis media at three months, measles at six months, and chicken pox at eight months. He was unable to stand at thirteen months, when his weight was sixteen pounds. His parents were both in good health, and there was no history of diabetes in the family.

The evening before admission he vomited his evening feeding, became stuporous, had an ashen color, cold and clammy skin, and diverging strabismus.

Examination showed an undernourished and underdeveloped male infant, who was cynosed. During the examination he had a convulsion which lasted about thirty seconds. He was anemic and the chest showed a rachitic rosary and flaring costal angle.

Laboratory findings: The urine was entirely normal. Hb. 58 per cent; R.B.C. 4,550,000; W.B.C., 11,800; neutrophiles, 59 per cent; lymphocytes, 39 per cent; mononuclears, 1 per cent; transitionals, 1 per cent.

Tentative diagnosis of gastro-intestinal unset, early acute infection, or possible drug poisoning was made.

Colonic irrigation, external heat applications, and glucose water by mouth, brought prompt improvement, and within four hours he appeared as a child recovering from a sedative drug. He was discharged three days after admission with a diagnosis of gastro-intestinal toxemia.

The second admission was on October 7, 1932. He had a history of persistent vomiting the day before, and on admission was stuporous, pale, and carpopedal spasm was present. The skin showed definite evidence of dehydration. Impression: Infantile tetany from alkalosis due to persistent vomiting.

Laboratory findings: Blood sugar content too low to read, urea nitrogen 17 mgs. per cent; CO^2, 30 vol. per cent; creatinine, 1.3 mgs. per cent; urine was acid, S.P. 1.028; very faint trace of albumin, no sugar, acetone 4 plus, diacetic acid negative.

From the laboratory findings it was concluded that the cataleptic stuporous state was due to hypoglycemia. After the administration of six ounces of glucose water by mouth the child rapidly came out of the stupor. He was discharged in three days.

One month later he was again admitted looking the same as he had on previous admissions, but his liver was enlarged three fingerbreadths below the costal margin.

Laboratory findings: Blood sugar content was too low to read; calcium 11 mgs. per cent; phosphorus 4.9 mbs. per cent; urea nitrogen 13 mgs. per cent. He improved rapidly after glucose in saline was administered. Four days after admission his general condition was good. Blood Wassermann test was negative; and the bromsulphophalein test was normal. Several twenty-four hour urine specimens were free from sugar. This definitely indicated that renal glycosuria was not the cause of the hypoglycemia. Three glucose tolerance tests with 1.75, 3.4, and 4 gms. of glucose per kilogram of body weight all showed increased tolerance with apparent abnormal balance in the factors which control carbohydrate metabolism.

On November 14 and 19, the patient had mild attacks of hypoglycemia shock which were promptly relieved by the administration of orange juice. The mother opposed an exploratory laparotomy for a suspected cyst or tumor of the pancreas. On December 4, he was discharged with a diagnosis of hypoglycemia due to hyperinsulinism.

Eight days later he was again admitted suffering from diarrhea and vomiting for two days previous to admission. Intravenous injections of glucose brought about a prompt cessitation of symptoms. Two days later he was discharged.

The fifth admission was made nine months later. The child was hurried into the accident ward dead. During the nine months previous to admission he had had only one attack of shock due to hypoglycemia. He had had pneumonia in February with a temperature of 104 without developing any signs of hypoglycemia and had been in good health until he had had a convulsion on the morning of his last admission and had never regained consciousness.

Necropsy was performed fifteen hours after death. The body was markedly dehydrated; the thymus was perhaps enlarged, but showed only normal tissue in the histological examination. The thyroid seemed definitely subnormal in size, and weighed less than five grams; it showed inactive

structure and numerous acini were filled with homogenous dark stained colloid.

The spleen, pancreas, kidneys, gastro-intestinal tract, brain, and pituitary were all grossly normal.

The adrenals were apparently diminished in size, but the histological examination showed normal, well preserved tissue.

The liver was of normal size and consistency, but showed some acute congestion, with marked granularity of the cytoplasm of the individual cells. In some fields there was early nuclear changes such as pyknosis.

Sections taken from numerous blocks throughout the pancreas showed hyperplasia of the islands of Langerhans, a periductile fibrosis more noticeable in the head and body of the organ, and an acute necrosis in the head of the pancreas associated with dilatation and catarrhal obstruction of the pancreatic duct.

The author calls attention to the fact that in children with sudden weakness, muscle tremor, strabismus, convulsions, and coma may be due to hypoglycemia and that blood sugar determination should be routinely performed when such symptoms arise.

The depressing effect of infection upon insulin production was strikingly evident from the fact that no attacks of hypoglycemia shock occurred during an attack of severe bronchopneumonia.

A low carbohydrate, high fat diet has been recommended in order to avoid the stimulating effect of carbohydrate on insulin production. And recently H. J. John has recommended the use of insulin in the treatment of hyperinsulinism; this eliminated any demands on the islands of Langerhans and if the dosage is properly adjusted and the patient does not get insulin from the pancreas the lower level of shock should not be reached. The pancreas is placed at physiologic rest and hypoglycemia is eliminated.

The Allergic Theory of So-Called Thymic Death. George L. Waldbott, M.D., Detroit. J. A. M. A., August 31, 1935, Vol. 105, No 9, Page 657.

Although the theory that thymic death and anaphylactic shock are closely related has been suggested in the literature, it has not gained adherents rapidly, probably because until recently anaphylactic reactions were thought to occur only in animals—not in man, and that the phenomenon occurred only when antigens of protein nature were injected into the body.

Medical literature has for many years associated with the so-called thymic diathesis features that are now considered allergic—such as a tendency to nasal and bronchial catarrhs, to enlarged tonsils, adenoids, and other lymphoid structures, to eczema, and to eosinophilia, as well as a tendency in a family toward these conditions. The author has observed sudden deaths in allergic families which presented a picture similar to thymic death on autopsy.

HUMAN ALLERGIC SHOCK

It has been shown that allergic shock in man depends primarily on the following factors: (1) the degree of the individual's sensitivity—whether inherited or acquired by previous sensitization as for instance to horse serum; (2) the size of the overdose of the injected antigen; and (3) to the rapidity of absorption. In the last case death was usually found to be due to the accidental injection into a vein.

The manifestations of allergic shock are varied. Usually there is a predominance of respiratory and dermal symptoms due either to true allergic edema of the urticaria type or to edematous hemorrhagic lesions which are followed by necrosis. Convulsions, hematuria, and severe gastro-intestinal pains are other manifestations which often occur.

If the antigen (which may be non-protein in nature) is injected intravenously death may occur so swiftly that symptoms relative to any particular organ may not be identified. It has been shown in fifty cases which the author studied that ingestion of food, taking of drugs by mouth, inhalation, contact of the antigen with the skin, cold, and heat are factors other than the injection of an antigen which have produced allergic shock.

The author reviewed 104 autopsies from various hospitals in which a diagnosis of thymic death had been made. He found a great deal of evidence which suggests that the condition termed "thymic death" is a pre-allergic phenomenon, not similar to or identical with anaphylactic shock, but probably occurring before the body has had an opportunity to build up a defense mechanism against the stimulus which might later have produced only asthma or some other allergic manifestation.

Since the knowledge of this condition is really limited and a matter of so much controversy, it is impossible to outline definitely measures of prevention and treatment. Epinephrine usually controls urticarial lesions, and in some cases the administration of extremely small doses of the sensitizing antigen, if it is known, in a manner similar to that in which allergic conditions are controlled at the height of their development, may avert fatal outcome of the shock—that is of course if death does not occur instantly.

The author presents a study of the allergic theory of so-called thymic death, and his studies indicate that the possibility of allergic phenomenon should be carefully considered before it is ruled out in a suspected case of thymic shock.

The Significance of Pyuria in Children. Alexander B. Hepler, M.D., Seattle, and Russell T. Scott, M. D., Lewistown, Idaho. J. A. M. A., August 17, 1935, Volume 105, Number 7, Page 499.

Since pyuria is the most important sign of urogenital disease in children, and since all previous studies regarding the amount of pus that was supposedly present in the urine under normal conditions had been reported without reference to the methods of collection and examination of the specimens, the authors present a comprehensive study of the urines of 694 children (400 males, 294 females) who were admitted to the Children's Orthopedic Hospital for a period of nine months, March, 1931, to January, 1932.

The systematic study was conducted as follows: A centrifuged urine specimen was examined when the child was first admitted to the hospital. If this examination disclosed any pus, an uncentrifuged specimen was examined. If this examination was positive, a catheterized specimen, both centrifuged and uncentrifuged, was examined. If there were no pus cells in these specimens, a note was made of any uninary symptoms and of any past history of urinary complaints; if these were negative the examination was dropped. If, however, they were suggestive of urinary disease another centrifuged specimen (catheterized) was examined. If there were pus cells in the above specimens the history was carefully checked for urinary symptoms, plain roentgenograms were taken, functional tests were performed, and excretory urograms and complete renal study were made. If this examination was negative another catheterized specimen was examined.

Pus was found in the voided centrifugated specimens of ninety-nine per cent of the patients in amounts ranging from an occasional to over twenty cells per high dry field; while pus was found in

only thirty-six per cent of the uncentrifugated voided specimens.

Pus was found in thirteen per cent of the catheterized centrifugated specimens, and in nine per cent of the catheterized uncentrifugated ones.

It is obvious therefore that an uncentrifugated catheterized specimen should be examined if a quantitative estimation of pus in the urine is to be made.

INCIDENCE OF URINARY TRACT DISEASE IN THE PRESENCE OF PYURIA

Following the above plan of examination the authors found that a complete renal study was indicated in sixty-six cases. Their results indicate that the amount of pus in urine properly collected is no indication either of the kind or severity of the urinary tract disease.

There were three patients with advanced infected hydronephrosis with less than one pus cell per high dry field, and in one with an osteovesical fistula from sclerosing osteomyelitis of the ilium there was a rare pus cell, while in another with a similar condition there were many pus cells. Fifty per cent of the twenty-six patients with demonstrable urinary tract disease had pus in the urine in amounts well under what is quoted in the literature as a normal pus content.

Of the sixty-four children with pus in the catheterized urine, only thirty-seven per cent had demonstrable urinary tract disease.

The authors' studies indicated that urinary complications in children with bone and joint tuberculosis are not common, and that prolonged immobilization on frames or in casts does not tend to urinary stasis, infection, and stone formation.

The necessity for negative cultures as a criterion of cure in urinary infection in children has been emphasized by Helmholz. The authors conducted a comparative study of the fresh smear and culture method of determining the type of organisms in 183 urines. The results of these two methods coincided in 170 or ninety-two per cent of the cases. This would indicate that the fresh smear method is entirely satisfactory for routine examinations and that these examinations should be made.

By HUGH JETER, M.D.

Some Problems in Pregnancy and Diabetes. An Analysis of Twenty Pregnancies in Seventeen Patients and a Preliminary Report on 238 Collected Cases in the Literature. David W. Kramer, M.D., Philadelphia, Pa. From the Medical and Obstetrical Departments, Jefferson Medical College.

The effect of pregnancy upon diabetes is by no means uniform.

It is only conjecture that increased tolerance on the part of the mother is the result of added insulin secretion from the fetus.

Acidosis may exist in the later months of pregnancy without symptoms and signs. Coma is relatively infrequent, but may develop suddenly in later months of pregnancy. Hydramnios is relatively a frequent occurrence in diabetes. The death rate is comparatively high—3.3 to 7.9 per one thousand.

Fetal Mortality: One hundred fourteen live births out of 238 pregnancies (forty-seven per cent).

Management of Diabetes and Pregnancy: The patient should be impressed with the necessity of cooperating faithfully. Frequent observations should be made. The diet should be ample. In later months hospitalization is advisable. Induction of labor may be necessary in the late months of pregnancy, especially if diabetic coma appears and is resistant to treatment. Natural delivery is preferable.

When lactation sets in the blood sugar may drop and the dose of insulin must be diminished promptly.

The question as to how we are to advise diabetics who desire children cannot be answered without taking into consideration the condition of the patient and her ability to cooperate fully with the physician.

The successful termination of pregnancy in a diabetic patient will depend upon the severity of the disease, frequent periodic examinations throughout the period of gestation, faithful adherence to the diabetic regime, and the skillful management of the case both by the obstetrician and the internist.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Building, Tulsa

Neuroretinitis Associated with Symptoms of Ergot Poisoning. Daniel Kravitz, M.D., Brooklyn. Archives of Ophthalmology, February, 1935.

There are no recorded cases that the author could find of this ocular complication in this country. Meier was the first to write of the ocular complications following ergot poisoning. He reported 283 cases of which twenty-three developed cataract, usually bilateral, developing in from six weeks to three months. Later other ophthalmologists and medical men reported similar findings. Amblyopia and cataract were the most important sequelae of the poisoning reported. If the amblyopia was not present, removal of the cataract gave good results. The picture of the fundus is not constant according to these reports. Some of the retinas were slightly discolored and swollen, and the borders of the disks as well as the course of the vessels were indistinct. Others showed an acute hyperemia of the disks and retinas, and the fundi appeared greyish red. In the latter cases the borders of the disks as well as the vessels were clearly outlined. In still others there were pallor of the retinas and disks with contraction of the vascular trunks.

The two forms of ergot poisoning are gangrenous and convulsive. Symptoms of the gangrenous form are general lassitude, vague lumbar pains or pain in the limbs, dulling of the intellect, swelling and inflammation of the affected parts with violent burning pains, alternating periods of intense heat and cold, lividity, frigidity and numbness of the skin, and dryness and blackness of the affected area. Variations from the loss of nails to the loss of limbs are recorded. Symptoms of the convulsive form are severe fits and muscular contractions, permanent epilepsy or feeblemindedness (among survivors), and in the mild form a feeling of pins and needles through the body. The ocular complications occur mainly in the latter form. Some individuals are more susceptible to this drug than others. One person may be affected adversely by small amounts of ergot while others may take relatively large doses without ill effect.

In this article the history of the drug is given dating back to the eating of rye bread by the Teutons and Russians. It is noted that comparatively the people of this country consume very little rye bread. If the rye is planted during the rainy season and this is followed by a hot spell, the contamination is greatly increased. Ergot deteriorates on standing, so the longer the rye is stored before it is used the less is the chance of poisoning. In the

olden times it was recognized that this form of poisoning occurred most frequently among the poorer classes and it was particularly noticeable after a previous crop failure when the new rye was used for bread.

The case reported is that of an Italian woman, age twenty-two, whose chief complaint was loss of vision for the past two months. She had been married for five years and had two children living and well and had never had any miscarriage or abortions. She came in to the medical department of the Brooklyn Hospital on January 26 and it was not until a month later that she was admitted to the ophthalmological department. At the time of entrance she also complained of pain in the occipital region and in the left shoulder and arm. Syphilis, encephalitis, optic neuritis, hereditary and other neurologic diseases had been ruled out by the medical department. Vision in the right eye was 20/200 and in the left 20/50. Glasses did not improve her vision. The fundus findings and the fields are given in the report. It was not until she came to the ophthalmological department that the history was elicited of her having had a "missed" period two months previously to her appearing at the hospital. For this she had taken some pills purchased from her druggist containing one grain of ergot.

Treatment of Thrombosis of the Lateral Sinus. Philip E. Meltzer M.D., Boston. Archives of Otolaryngology, August, 1935.

This article presents the results obtained during the twelve years, from 1921 to 1932, inclusive, at the Massachusetts Eye and Ear Infirmary. Eight tables are given under the following headings: Analysis of the Cases of Resection of the Mastoid, Age Incidence, Analysis of the Conditions Found When the Lateral Sinus Was Incised, Post-operative Complications, Incidence of Metastasis, Analysis of the Conditions Found When the Lateral Sinus Was Incised in Cases of Metastasis, Analysis of the Fatal Cases, and Length of Time Between Mastoidectomy Ligation and Opening of the Sinus. The author's summary is given below.

Symptomatically it is impossible to distinguish between sinus thrombosis and phlebitis.

In a total of 4,961 cases of resection of the mastoid the diagnosis of sinus thrombosis was made in 161 cases, indicating that it occurred once in approximately thirty-one cases. Sinus thrombosis is the most frequent complication of mastoiditis, the greater number of cases occurring in association with acute otitis. It occurred more often in patients between eleven and twenty years of age, the curve of incidence tapering off sharply at both extremes of age.

Metastasis was an uncommon complication before ligation of the jugular vein. Involvement of the joints was the most common complication, the greatest number of cases occurring after ligation and treatment of the sinus. Involvement of the joints adds to the seriousness of the disease as it may prove to be the focus which continues to feed organisms into the blood stream.

Blood cultures are of value as an aid in establishing a diagnosis or at least in focusing attention on the lateral sinus. In the presence of continuing symptoms negative results of blood cultures should not contraindicate examination of the sinus.

The Ayer-Tobey test is a valuable diagnostic aid. The reliability of the test is dependent on the experience and carefulness of the person making the test.

The records bear out definitely the common knowledge that the appearance of the sinus gives no indication of what may be within it. One has more reason, however, to suspect injury to the endothelial lining in cases in which there is a perisinuous abscess.

Sinus thrombosis is not necessarily fatal if not treated surgically. Operation is always indicated, in my opinion as the best means of aiding the patient to overcome the infection, affording drainage which thereby tends to limit the disease. Extirpation of the focus of disease is an impossibility; the surgeon merely aids the patient. The battle for supremacy is between the infecting organism and the patient's power of resistance.

Post-operative sinus thrombosis occurs infrequently as compared with the manifest and latent types of thrombosis.

Secondary infection of the wound of the neck occurs fairly commonly.

The percentage of fatalities in general may be considered to be between twenty and thirty per cent. In this report the patients who were hopelessly ill on admission were excluded. In the combined series there were 148 patients, of whom thirty-two, or 21.7 per cent, died and 116, or 78.3 per cent recovered. Excluding intracranial disease sinus thrombosis must be considered to have a relatively high mortality rate.

Some Remarks on the Recession Operation for Squint. J. G. Milner, London. The British Journal of Ophthalmology, August, 1935.

There is a table given showing the results obtained in a series of fifty recession operations performed between 1932 and 1934. This table includes the Case, Date of Operation, Type and Angle of Squint, Operation, Immediate Result, Late Result and Remarks. From the table he shows: (1) Thirty-seven cases, or seventy-four per cent, were cosmetically straight (five degrees convergence is regarded as straight) after periods varying from three months to three years. (2) Ten cases were straight only with glasses, converging about ten degrees without glasses. (3) The average angle of reduction was twenty-four degrees. (4) Of the thirteen cases not straight, nine were alternating, and of these nine the original angle of squint was thirty degrees or more in seven. (5) Nine cases, immediately after operation were convergent ten degrees or more, but that all of these became less convergent later. (By the immediate result he means the result at the time of the patient's discharge from the hospital, ten days after the operation).

A synoptophore is used to measure the angle of the squint previous to the operation. Evipan is used for anaesthesia if the patient is a child. The incision is made three mm. from the limbus through the conjunctiva. He uses a silk stitch in the conjunctival flap for traction in addition to keeping the flap located for the closure at the end of the operation. He cautions against opening the rectus sheath because of the ensuing bleeding and probable formation of adhesions later, lessening the amount of the recession. A squint hook and later a Prince's forceps are next used. When cutting the muscle he leaves a small stump on the sclera which helps later in rotating the globe. Before the sutures are inserted, the operator must be sure that the muscle is entirely free. He uses 000000 catgut on a curved squint needle (split-eye). The method of inserting the sutures is illustrated. The muscle is re-attached in the region of the equator, care being taken not to pierce it as it is very thin at this point. The sutures are inserted about eight mm. apart in order to keep the muscle band flat. The conjunctiva is closed with silk sutures. The silk sutures are removed in one

week. After operation both eyes are bandaged and the child kept in bed for one week. The eyes are irrigated once daily unless occasion demands that it be done more often. At the end of the week the bandages are removed and the child starts wearing glasses immediately unless there is no refractive error. If a second operation is deemed necessary the author prefers waiting several weeks before it is done.

An Anatomical Investigation of Blood Vessels of the Lateral Nasal Wall and Their Relation to Turbinates and Sinuses. Howard B. Burnham, Toronto. The Journal of Laryngology and Otology, August, 1935.

There are twenty-two pages of material including drawings, plates and microphotographs. The subject the author takes for investigation is practically ignored in the anatomies of the present day. He has evidently spent a great deal of time and effort in arriving at his conclusions, which are reproduced below:

BONY CANALS. Large canals present in the central part of the middle, and posterior half of the inferior turbinate bones contain: (1) terminal branches of the turbinate arteries; (2) veins ("jacket plexus"), which form an essential part of the venous pathways; (3) nerves. Three definite canals are present in the posterior half of the inferior turbinate. The uppermost of these canals contains vessels for the antrum and its connection with the latter through the "uncinate aperture" which is described. This "aperture" is a very important and constant naso-antral bony opening, inferior to the uncinate process, through which the antrum obtains a large part of its blood supply. In the central one-third of the middle turbinate, a single canal terminates anteriorly in three smaller divisions.

VENOUS PATHWAYS. The term "venous pathways" has been used to indicate the large channels of veins which carry the blood over the lateral nasal wall to the sphenopalatine foramen. They are three in number: (1) inferior turbinate, (2) middle turbinate, (3) superior turbinate venous pathways. Each pathway is made up of erectile vessels which pass into either periosteal or "intraosseous" veins and each of these joins the "jacket plexus" of veins within the bony canals of the turbinate. They then leave the canals, passing into periosteal veins again before reaching the sphenopalatine foramen. The "intraosseous" veins are mainly present in minute bony canals in the anterior half of middle and inferior turbinates and have not previously received consideration in the literature. The erectile tissue empties directly into these "intraosseous" veins; very few arterioles are associated with them. The erectile tissue also passes into the periosteal vessels which accompany the larger arteries. These periosteal veins enter the large bony canals in the posterior half of the turbinate and are continuous with the "jacket plexus" which the latter contains. A few of the periosteal veins also accompany the arteries which pass over the lateral nasal wall to the sphenopalatine foramen. They are, however, of distinctly minor importance compared to the large bony channels just referred to, and cannot be considered as the important venous pathway.

VENOUS LAYERS. The superficial veins of the lateral nasal wall present such sharp turns and twists in their courses that they may be described as convoluted. This is particularly true of the erectile tissue areas. The periosteal veins, on the other hand, both those found within the large turbinate canals and those on the surface, have a more wavy course with much fewer and less abrupt turns. The veins of the sinuses are of the periosteal type; and from the plexus about the ostium, take a comparatively straight course into the sinus. This ostial plexus is but a few millimetres in width, except in the case of the antrum, in which it covers a large part of the medial wall. The vessels pass into the sinus and either end in capillaries or are cojoined to collateral branches. In the sinus, no definite superficial layer of veins has been found and a distinct contrast is evident between the straight coursed veins of the sinus and the convoluted one of the lateral nasal wall. The erectile (cavernous) tissue vessels present pouches or pockets in their walls continuous with the lumen of the vessel but enlarging it considerably.

The author closes with a statement of the clinical significance of his anatomical findings.

DERMATOLOGY, RADIUM AND X-RAY THERAPY

Edited by William E. Eastland, M.D.
LAIN-ROLAND-EASTLAND CLINIC
705 Medical Arts Building, Oklahoma City

Report on X-Ray Treatments in Gas Gangrene Cases. J. J. Faust, M.D. Radiology, Vol. XXII, No. 1, January, 1934, 105-106.

After the author read the preliminary report on the successful treatment of six gas gangrene cases given by Dr. Kelly, he was inspired to treat five cases of his own. The technic used in these treatments was as follows: Five-inch spark gap, five ma., forty cm. distance from target to skin, with 0.5 mm. al., filter for three minutes over each involved area. The number of treatments vary from six to ten, two treatments being given a day in some cases. The author is quoted in the following statement: "The serum used was supposed to be specific for B. welchii and B. vibrion septique, whereas two cases had B. clostridium tertium infections. Since the serum was not positive for this organism it may not have had anything to do with the results and the x-ray may have been entirely responsible for the cures." In all cases recovery was made regardless of the anatomical location, and the essayist felt that x-ray was a definite aid in the recovery. He makes a comment stating that in future cases he will try x-ray alone unless the results are not favorable within a reasonable length of time.

Carcinoma of the Lip and Mouth. Charles L. Martin, E.E., M.D. Radiology, Vol. XXII, No. 2, February, 1934, 136-146.

The author presents his method of treating carcinoma of the lip and mouth with means principally of platinum needles, deep x-ray therapy, and superficial x-ray therapy. He relates the following principles upon which this work is dependent:

"1. Six to twelve erythema doses of irradiation are needed for the actual cure of squamous-cell carcinoma.

"2. Recovery is more rapid and surrounding normal tissues show a quicker return to normal when the treatment is administered over a prolonged period, usually from seven to fourteen days.

"3. Short wave lengths produced by heavy filtration lessen the injury to surrounding normal tissues but are not essential in treating superficial lesions on the lip.

"4. An attempt should always be made to produce a cure with the first series of treatments,

since the second attempt is never so successful and may produce injurious effects.

"5. Infection and irritation (tobacco, bad teeth, etc.) interfere with healing and must be eliminated during treatment."

The technic in the treatment of epithelioma of the lip is first discussed. It is briefly stated that the author's plan is daily x-ray treatment of lightly filtered x-ray until a total of six to twelve erythema doses have been given. A review of 119 cases traced for more than five years shows that 96.3 per cent of the patients are alive and well in those cases in which there was no lymphatic involvement. In certain instances weak radium needles are used interstitially in the treatment of lip malignancies; for example, in those cases which have been subjected to inefficient x-ray treatment and also in those cases in which the lip lesion extends into the commisure of the mouth. It is pointed out that intra-oral carcinoma is much more difficult to treat and to obtain good results than lip lesions. Attention is called to the work done in large radiological centers where radon seeds can be obtained, but the author points out the necessity of using heavily filtered platinum radium needles of low intensity. These needles vary in length from one cm. to four cm. The treatment is based upon the fact that it takes 0.6 of a milligram of radium in a one cm. needle to destroy one cubic cm. of squamous cell carcinoma in a period of seven days. Of thirty-seven cases treated by Martin, thirty have been treated more than one year. Although this duration is much too short to make any significant comment, nevertheless it must be stated that the primary lesions disappeared in all except three patients, and these were in cases who failed to exercise hygenic precautions in regard to tobacco and alcohol. Fifty-six per cent of the cases have been alive more than one year, and forty per cent have shown no evidence of carcinoma for a year or more. Two cases have remained alive and well for more than three years. It is of interest to note that regardless of the grade of the tumors the clinical results were equally good. The grading could be considered of value insofar as determining the possibility of metastases. In discussing carcinoma of the pharynx, attention is called to the mechanical inaccessibility of the part with platinum needles. With radon seeds this can be managed better. The radio-sensitivity of tumors in this region is greater than the histological findings indicate. The author has followed the idea advanced by Coutard in regard to deep x-ray therapy given externally. The author's conception of this technic is as follows: The filter is 0.75 mm. cu. and one mm. al. given in one-half erythema doses daily until ten or twelve such doses have been administered. This produces in two or three weeks a marked desquamation but no ulceration, followed by satisfactory healing. Martin states that such a technic may not be curative but it is highly palliative. In discussing cervical adenopathy, Martin divides these cases into three classes: (1) those in which there are no palpable lymph nodes, (2) those in which the palpable lymph nodes are considered operable, and (3) those having inoperable metastases in the neck. In the first instance it is a moot question as to the proper procedure, many surgeons advising block dissections. Such procedures often cause unnecessary risk when there are no metastatic malignant cells present. In view of the early metastases in lesions in the mouth it is here the author suggests block dissections in case it is done, whereas in lip lesions it is not advised as metastases here are late, if at all. He says that his statistics, as well as those of Duffy, compare favorably with radical surgical procedure. The radiation treatment is by means of deep x-ray therapy to each side of the neck. In the second instance when there are probable operable nodes present in the neck the patient is advised to have an operation. The following criteria is used in determining whether nodes are operable: They must be freely movable and comparatively few, showing no evidence of extension nor must they be broken through their capsules and situated only on one side of the neck. In the event that operation is done, and it is felt that malignant tissue is left behind, radon seeds or platinum needles may be used in suspicious lesions. In the third group in which the cervical nodes are inoperable, Martin classifies these as a radiological problem. To this end he advises internal and external radiation. The long platinum needles are inserted beneath the involved nodes and well beyond them and left in place for seven days. Externally, a one hundred mg. radium pack is placed in platinum capsules and left in place for thirty-six hours. Also, the patient is given deep x-ray therapy from the upper jaw to the clavicle. This produces a marked desquamation of the skin and a few areas may show temporary superficial ulceration, but this heals in the course of four to six weeks, leaving the skin soft and pliable and a marked reduction in the size of the malignant gland, as well as definite clinical improvement which may last from four to six months and sometimes longer. This is a very creditable article and time will tell the true merits when five-year cures can be determined.

Cancer of the Prostate. Bernard P. Widmann, M.D. Radiology, Vol. XXII, No. 2, February, 1934, 153-159.

At the outset of this article it is stated that it is its purpose to evaluate the results of roentgen ray and radium treatment in 152 cases of cancer of the prostate in the radiological department of the Philadelphia General Hospital. All of these cases were advanced and, therefore, could not be regarded as curative in the therapeutic approach. The main value of the paper was to determine the beneficial effects, if any, derived by treating with high voltage radiation and radium as compared to cases in which no treatment was given. To this end, of the 152 cases treated, 82 were selected because they had adequate radiation treatment, and 70 cases selected because no radiation treatment was given. All cases in the series eventually died. Several interesting statistical tables are given. the first of which shows the incidence of the first symptoms as noted by the patients. The second table shows the incidence of bone metastasis, while the third shows the physical findings as presented by rectal examination of the prostate. The author calls attention to Ferguson's classification of the grade of malignancies of the prostate as follows: High, intermediate and low grade malignancies, with an average life of six months, eighteen months and thirty months, respectively. In the latter instance it may last for many years. Moreover, the age incidence was fifty-five, sixty and sixty-five years or over in respective order. The essayist has perused the literature to a certain degree in which he shows the various opinions of different authors in regard to their attitude as to the value of surgery and radiation therapy of carcinoma of the prostate. It is stated that the factor which indicates beneficial effects of radiation is chiefly relief of pain. Among the statistics given it is interesting to note that the duration of life after entrance into the hospital for eighty-two irradiated cases was five and one-half months, compared to two months for seventy

cases without radiation. Of the irradiated cases, seventy-five per cent died within six months after the beginning of treatment, as compared with ninety per cent dying in which no treatment was given. The average total life for the radiated group of eighty-two cases was thirty-one months, compared with the average total life of twenty-five months in the non-radiated group of seventy cases. Also, thirty-four per cent of the irradiated cases were alive at the end of two years as compared to twenty-five per cent of those not receiving such treatment. The technic of the high voltage radiation therapy was given. In eight instances the cases were treated by gold seed implanation but the pathological involvement was so extensive that the results were not satisfactory. In the future such method will be used in those cases which are surgically operable. In bone metastases radiation was used to considerable advantage for palliation. There was no improvement in the bone condition per se. Mention is made of supplementary heavily filtered radium tampons placed in the rectum in which the growth is highly cellular, and it is spoken of favorably, but caution is given in regard to over-dosage. Early diagnosis is difficult, but Widmann hopes that aspiration biopsy will improve this matter. In his final paragraph in the summary it is stated "cancer of the prostate is essentially a radiologic problem. In selected early cases, interstitial radiation with gold seeds or platinum needles should offer great possibilities of improving the end-result."

The Treatment of Uterine Fibromyomas. Leda J. Stacy, M.D. Radiology, Vol. XXII, No. 2, February, 1934, 212-218.

This article is developed on a very fair and scientific basis inasmuch as it comprises 320 cases compared from four different angles; that is, those in which myomectomy, hysterectomy, radium therapy and roentgen ray therapy were done. The author prepared a table in which he considers these four different methods of treatment and then gives percentages in accordance with the state of health as to treatment and incidence to secondary treatment. The detailed considerations of health are as follows: (1) good, (2) bad, (3) not improved, (4) menstruation ceased, (5) menstruation became normal, (6) hot flashes, (7) nervousness, (8) pain in the pelvis, (9) subsequent operation necessary, (10) subsequent roentgen-ray treatment, (11) subsequent radium treatment. In compiling such a table it was necessary to make follow-up records and trace as many cases as possible. The incidence of cases traced is very high and, therefore, the results obtained and given in this table are valuable. The author summarizes the results of his efforts as follows:

"Patients having small fibromyomas which do not cause symptoms should be examined semi-yearly to detect any change in size or consistence of the tumor, and must be warned regarding the importance of any change in the menstrual cycle.

"The choice of treatment in cases of uterine fibromyomas that produce symptoms depends on the age and general condition of the patient, the size of the tumor, and symptoms.

"Myomectomy is the most conservative treatment. A woman who is in the child-bearing period of life should be allowed to choose this form of treatment, provided it is made clear to her that a radical operation may be necessary later.

"Hysterectomy is indicated in cases of previous pelvic infection, in cases in which the history suggests complications, as degeneration of the tumor or the presence of a submucous fibroid.

"Roentgen-ray and radium treatment in carefully selected cases give excellent results in a high percentage of cases."

Community Sanitation Program Launched

The greatest program of its kind ever to be attempted in the State of Oklahoma went into action this week by the appointment of Community Sanitation Supervisors in seventy of Oklahoma's seventy-seven counties. The Community Sanitation program is being sponsored by the State Department of Health, headed by Dr. C. M. Pearce, Health Commissioner, acting as agent for the United States Public Health Service, and the State WPA set-up. Technical supervision is under the direction of H. J. Darcey, State Sanitary Engineer and H. G. Payne, Assistant State Director of Community Sanitation.

The State's allotment of funds to carry on the sanitation work is $2,097,000.00. The object of the entire program is the prevention and control of certain filth-bourne diseases, such as typhoid fever, dysentery, diarrhea, etc. Since it is possible to contract these diseases only by eating and drinking germs coming directly from the body wastes, or excreta of afflicted persons, and such germs being spread by flies or surface water drainage to food and water supplies of the public at large, the entire program will be directed to the end of substituting sanitary fly-proof pit type toilets for the open, unsanitary and filthy toilets now in existence. Much research work has been done along this line by health authorities, and it is entirely possible to eradicate these deadly diseases by such sanitation methods.

To the property owner desiring a sanitary fly-proof pit type toilet as a permanent improvement for his property, construction of such toilets will be furnished by the WPA organization FREE. The only cost to the property owner will be the material for construction which usually runs from $4.00 to $5.00.

Possibly no project approved by state authorities will mean more to the health of the people of the state than that of community sanitation.

To all property owners who wish to take advantage of this unusual opportunity to not only improve their property but at the same time to do their part toward sanitating their community, helping in the prevention of the spread of filth-bourne diseases, we sincerely urge the medical profession of this state to get behind this program and put it over in a big way.

St. Louis Medical Society Invites Southern Physicians

The twenty-ninth annual meeting of the Southern Medical Association, the second largest medical organization in the United States, will be held in St. Louis, November 19-22.

The unusual clinical facilities of the two medical schools and the numerous hospitals, combined with the high standing of the medical profession, and the excellent hotel accommodations, make St. Louis an ideal city for this medical gathering.

Addresses and papers will be presented by distinguished clinicians, not only from the South, but from all over the United States as well as from several foreign countries.

The St. Louis Medical Society extends a very cordial invitation to all physicians in good standing in their State and Provincial medical societies to attend this meeting.

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Secretary-Treasurer-Editor, Dr. L. S. Willour, 203 Ainsworth Building, McAlester, Oklahoma.

Meeting Place, Enid, May 4-5-6, 1936.

Delegates to the A. M. A., Dr. McLain Rogers, Clinton, 1936-1937; Dr. W. Albert Cook, Tulsa, 1935-1936; Dr. Horace Reed, Oklahoma City, 1935-1936.

SPECIAL COMMITTEES, 1935-1936

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Scientific Work: Dr. J. M. Watson, Chairman, Enid; Dr. L. S. Willour, McAlester; Dr. A. W. Pigford, Tulsa; Dr. W. P. Fite, Muskogee

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